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Table of Contents

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PUBLIC HEALTH SERVICES— PAGE.

I.—The Commonwealth Health Service 679
II.—The Public Health Service of New South Wales 686
III.—Public Health Service in Victoria 688
IV.—The Public Health Service in Queensland .. 690
V.—Public Health Service in South Australia .. 692
VI.—The Public Health Service in Western Australia 692
VII.—The Public Health Service in Tasmania .. 694

SCHOOL MEDICAL SERVICES—

I.—School Medical Service of New South Wales 694
II.—School Medical Inspection in Victoria 696
III.—School Medical Inspection in Queensland .. 699
IV.—School Medical Inspection in South Australia 699
V.—Medical Inspection of School Children in Western Australia 702
VI.—The Medical Inspection of the State Schools in Tasmania 703

THE MENTAL HOSPITAL SERVICES— PAGE.

I.—The Care of the Insane in New South Wales 705
II.—The Hospitals for the Insane in Victoria .. 706
III.—The Care of the Insane in Queensland .. 706
IV.—The Care of the Insane in South Australia .. 707
V.—The Care of the Insane in Western Australia 708
VI.—The Care of the Insane in Tasmania 708

THE DEFENCE MEDICAL SERVICES 709

LEADING ARTICLES—

The Public Medical Services 711
The British Medical Association 712

MEDICAL EDUCATION IN AUSTRALIA 713
MEDICAL REGISTRATION 717
BOOKS RECEIVED 720
MEDICAL APPOINTMENTS VACANT, ETC. 720
MEDICAL APPOINTMENTS: IMPORTANT NOTICE 720
DIARY FOR THE MONTH 720
EDITORIAL NOTICES 720

Public Health Services.

I.

THE COMMONWEALTH HEALTH SERVICE.

CONTRIBUTED BY SPECIAL REQUEST BY THE DIRECTOR-GENERAL OF HEALTH OF THE COMMONWEALTH.

IN 1921 the Commonwealth Quarantine Service was expanded into a Department of Health.

This step was taken as a result of a conference between the Commonwealth and State Governments, after which it was decided that such a department established by the Commonwealth could discharge many functions in relation to health of national importance.

The functions of the Department as stated at the time of its establishment are as follow:

The administration of the *Quarantine Act*;

The investigation of causes of disease and death, the establishment and control of laboratories for this purpose. The control of the Commonwealth Serum Laboratories and the commercial distribution of the products manufactured in those laboratories;

The methods of prevention of disease;

The collection of sanitary data and the investigation of all factors affecting health in industries;

The education of the public in matters of public health;

The administration of any subsidy made by the Commonwealth with the object of assisting any effort made by any State Government or public authority directed towards the eradication, prevention or control of any disease;

The conducting of campaigns of prevention of disease in which more than one State is interested;

The administrative control of the Australian Institute of Tropical Medicine;

The administrative control of infectious disease amongst discharged members of the Australian Imperial Forces;

Generally to inspire and coordinate public health measures;

Any other functions which may be assigned to it.

In 1925 the Royal Commission appointed by the Commonwealth Government inquired exhaustively into the possibility of improving the existing system of health legislation and administration throughout the Commonwealth and presented a comprehensive report containing numerous recommendations, many of which contemplate some extension of the activities of the Department.

The recommendations of this Commission are being considered by the Commonwealth and State Governments, but up to the present no concerted action on definite lines has actually been taken.

The present functions of the Department are distributed for executive purposes amongst four Divisions; the activities of each of these Divisions are set out in detail hereunder.

Division of Marine Hygiene.

Briefly the Division of Marine Hygiene of the Commonwealth Department of Health is concerned with the following functions:

International cooperation in respect of quarantinable and epidemic diseases;

Maritime quarantine;

The control of infectious diseases in the mercantile marine;

Medical inspection of passengers and crews of vessels under the *Immigration Act*, 1901-25;

Sanitation in the mercantile marine;

Medical inspection of seamen under the *Navigation Act* and *Seamen's Compensation Act*;

Medical inspection of steerage passengers and crews and of accommodation, provisions, water and medical stores *et cetera* of emigrant ships;

Commerce Act: Restrictions on importation of therapeutic products and the like.

The Division is administered by the Director, Division of Marine Hygiene, who is responsible to the Director-General of Health for the control of all the activities of the Division.

International Cooperation in Respect of Quarantinable and Epidemic Diseases.

International health questions are kept under review including the deliberations of the international sanitary conferences at the office *International d'Hygiène Publique* at Paris, on the permanent committee of which Australia has a representative. The permanent committee of the office *International d'Hygiène Publique* is charged with the periodical revision of the International Sanitary Convention to which the Commonwealth of Australia is a signatory and which forms the basis of quarantine procedure throughout the world.

The work of the Health Committee of the League of Nations is followed, this body being concerned with matters of health organization and administration of an international character.

Close touch is kept with epidemic disease conditions throughout the world, information regarding which is regularly received from international sources and is distributed to all departmental offices concerned. Similarly under the terms of the International Sanitary Convention information regarding quarantinable and infectious disease in Australia is collected and forwarded to the international authorities concerned, as well as to the officers of the department in the various States.

Maritime Quarantine.

For quarantine administrative purposes Australia is divided into six divisions, each under a chief Quarantine Officer (General), who is in local administrative control of quarantine matters within his division. These divisions coincide with State boundaries, excepting that the north-eastern division extends beyond Queensland State boundaries to embrace the quarantine administration of the Northern Territory. Under each chief Quarantine Officer (General) is a staff of permanent quarantine officers and quarantine assistants at the principal ports and of part time quarantine officers at minor ports. In addition to maritime quarantine work proper matters connected with medical inspection under the *Immigration Restriction Act*, medical inspection of shipping and of seamen and so forth are also handled by the chief Quarantine Officers (General) in local administrative control.

The chief Quarantine Officers (General) come under the immediate supervision of the Division of Marine Hygiene in order to provide for the coordination of quarantine procedure throughout the various divisions, the functions of the chief Quarantine Officers (General) being included in the functions of the Division of Marine Hygiene.

Under the heading of maritime quarantine are included all matters relating to the following matters.

(i.) Medical inspection of vessels coming from overseas, close supervision being maintained over these vessels from the moment they reach the Australian coast in order to guard against introduction of disease. Vessels and all persons thereon are medically inspected at the first port of entry in Australia and again at subsequent ports until a period of eighteen days has elapsed since clearance from the last overseas port of call, full pratique being withheld until this time has elapsed. Even when full pratique has been given, the master of the vessel is under obligation to report any cases of communicable disease subsequently developing on the vessel, such cases being immediately investigated by the quarantine officer.

(ii.) Maintenance of quarantine stations in a fully equipped condition ready for use without notice. Quarantine stations have been established at various ports on the Australian coast to handle vessels arriving with quarantinable disease on board or on which quarantinable disease has occurred during the voyage.

(iii.) Fumigation and disinfection of vessels generally and the supervision of berthing regulations

which aim at the prevention of the introduction or spread of plague and other quarantinable disease. These measures are applied not only to oversea vessels, but also to vessels in the interstate and intrastate trade. At the principal ports in Australia a permanent staff is employed for this work. At other ports local arrangements are made for the work to be carried out.

The Control of Infectious or Communicable Disease in the Mercantile Marine.

This is really a portion of maritime quarantine work dealing with infectious and communicable diseases not properly classified as quarantinable. The *Quarantine Act* and regulations provide for the control of communicable disease in the mercantile marine, including venereal diseases, it being obligatory for the master of any vessel to notify immediately to the quarantine officer any case of the diseases scheduled in the regulations which occurs on his vessel. Such cases are then investigated by the quarantine officer and appropriate action taken regarding isolation and regarding precautionary measures in respect of contacts. These measures are applied both in the case of overseas vessels and of interstate and intrastate shipping.

Medical Inspection Under the Immigration Act, 1901-1925.

Quarantine officers at the ports of entry into Australia have been gazetted officers under the *Immigration Act*. They are concerned particularly with the examination of passengers with a view to excluding from the Commonwealth: (i.) persons likely, owing to disease or disability, to become a charge upon the Commonwealth, (ii.) idiots or insane persons, (iii.) persons suffering from communicable disease.

Persons who come under one or other of the classes mentioned above, are reported to the customs boarding officer who puts into operation the machinery of the *Immigration Act*.

Advice is also given to the Home and Territories Department in respect of immigrants who have arrived in Australia and whose deportation is considered desirable for medical reasons.

Sanitation in the Mercantile Marine.

The Division of Marine Hygiene is responsible for the inspection of accommodation for officers and seamen and for passengers on vessels, as provided for in Division 15 of the *Navigation Act*. Quarantine officers have been appointed medical inspectors under the *Navigation Act* and carry out the examination of every vessel registered in Australia or engaged in the coastal trade from the point of view of the superficial and cubic space provided in the accommodation, ventilation, sanitary and lavatory accommodation, hospital accommodation, sleeping accommodation, mess rooms and so forth. Accommodation on vessels is brought into conformity with the provisions of the *Navigation Act* and routine inspections are carried out to insure that the accommodation is kept in a satisfactory condition in all particulars. Some five hundred vessels of all types are under constant inspection.

Medical Inspection of Seamen under the Navigation Act.

Quarantine officers have been appointed to act as medical inspectors of seamen under the *Navigation Act*. Their duties are: (i.) Medical inspection of seamen applying for employment or employed on a British ship to determine whether the seamen are in a fit state for duty at sea; (ii.) medical inspection of seamen where an injury has been received or illness has developed in the service of the ship. The examination is to determine the liability of the owner in regard to the provision of medical attendance and maintenance; (iii.) medical examination is required in the case of a seaman left on shore on account of illness or accident incapacitating him for duty.

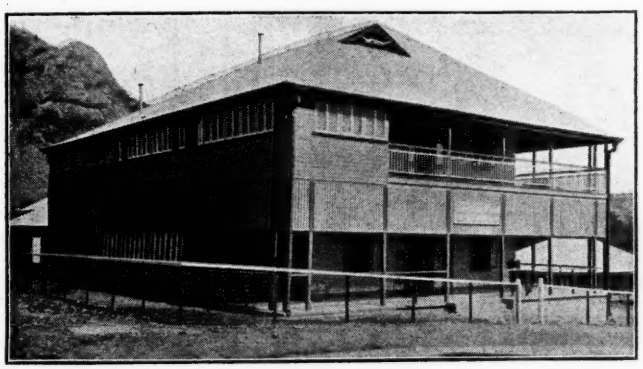

FIGURE I.
Australian Institute of Tropical Medicine, Townsville.

Medical Inspection of Seamen Under the Seamen's Compensation Act.

Quarantine officers have been appointed referees under the *Seamen's Compensation Act* and to the referee is referred the case of any seaman who has submitted himself for examination and about whose condition there is disagreement between the employer and the seaman as to the latter's condition or fitness for employment.

Medical Inspection of Steerage Passengers and Crews on Emigrant Vessels.

Quarantine officers have been appointed medical inspectors of steerage passengers and crews and of accommodation, provisions, water and medical stores *et cetera* on emigrant ships as provided for under the British *Merchant Shipping Acts*.

In the case of all vessels classed as emigrant vessels, which in general includes all vessels carrying more than fifty steerage passengers, medical inspection of the crew and steerage passengers is carried out in order to insure that none of the steerage passengers or crew about to proceed on the ship is by reason of any bodily or mental disease

unfit to proceed or likely to injure the health or safety of the other persons about to proceed on the ship.

The accommodation, provisions, water and medical stores are also inspected to insure that they are satisfactory before the vessel proceeds on her voyage.

Commerce Act.

In connexion with *Commerce Act* restrictions, questions regarding importation of apparatus for therapeutic or diagnostic use, proprietary medicine, infants' foods and the like are submitted by the Customs Department for advice as to whether they comply with the regulations and as to whether or not importation should be permitted. Advice is also given when required as to tariff classification of instruments and apparatus.

Laboratories Division.

When the war began in 1914 Australia was almost wholly dependent on supplies of sera, vaccines and other biological products from overseas. Importation of these agents rapidly diminished. Finally the shortage of diphtheria antitoxin became so acute that a deputation representing the Victorian Hospitals Supplies Board waited on the Minister for Trade and Customs to urge upon him the necessity for Australia to undertake the preparation of biological products. The Minister then asked the present Director-General of Health to prepare a scheme for the foundation of laboratories for the purpose of rendering Australia independent of foreign supplies. The proposals submitted were adopted and a commencement was made by appointing Dr. W. J. Penfold as Director and building the Commonwealth Serum Laboratories at their present site.

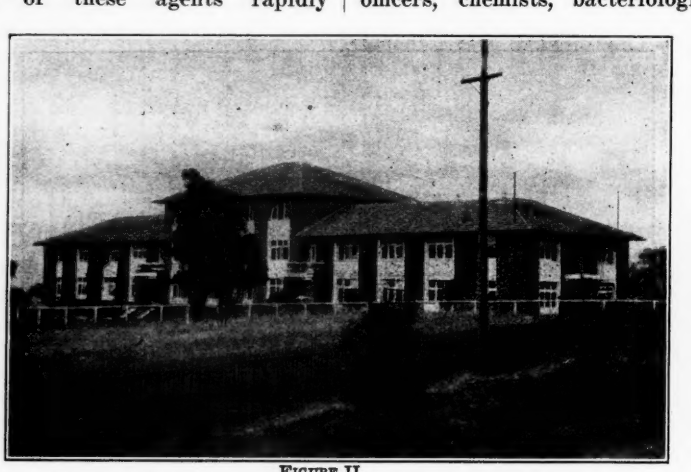

FIGURE II.
Commonwealth Serum Laboratories, Royal Park, Melbourne.

Preliminary work was undertaken by Dr. Penfold and his assistants at the Walter and Eliza Hall Institute at the Melbourne Hospital in 1917. The new laboratories at Royal Park were occupied in July, 1918. The work rapidly progressed and an increasing number of biological products became available.

A further development of the laboratory scheme took place when in 1921 a movement was definitely commenced to establish clinical pathological laboratories in country centres throughout Australia, where facilities for laboratory diagnosis of disease were previously not available to the medical profession.

The Laboratories Division of the Department of Health consists of two parts; the main laboratories at Royal Park, Victoria, and a chain of country laboratories.

Health laboratories are established at Rabaul, New Guinea; Bendigo, Victoria; Townsville, Queensland; Toowoomba, Queensland; Lismore, New South Wales; Rockhampton, Queensland; Port Pirie, South Australia and Kalgoorlie, Western Australia.

The laboratories work in close cooperation with the Institute of Tropical Medicine at Townsville, Queensland.

The activities of the Commonwealth Serum Laboratories may be grouped under four headings: (i.) public health, (ii.) educational, (iii.) research and (iv.) manufacturing.

A staff of one hundred and twenty is at present employed and the personnel includes medical officers, chemists, bacteriologists, highly trained technical assistants and a clerical staff.

The work of the laboratories is of a very specialized and technical nature and the preparation of biological products on the large scale requires a further specialization which is difficult of attainment apart from experience in such laboratories as these. Officers who have received such special training, become very valuable and are difficult of replacement.

From this point of view the selection and training of the laboratory personnel may be regarded as perhaps the most important achievement in the work of the laboratories during the past eight years.

On the manufacturing side sufficient sera are produced to supply the whole of the Australian needs. Sera are being prepared for the treatment of diphtheria, anthrax, cerebro-spinal meningitis, pneumonia, puerperal fever, scarlet fever, gonorrhœa, influenza and tetanus. A laboratory equipped for the concentration and purification of sera is in charge of a highly trained biochemist.

Vaccines are prepared on the large scale for the prevention or cure of many diseases, including cholera, smallpox, dysentery, typhoid fever, influenza, gonorrhœa, whooping cough, plague, boils and acne.

Since December, 1922, the preparation of "Insulin" for the treatment of diabetes has been in progress. Very large quantities of this valuable preparation are now being supplied to patients suffering from this disease. It has prolonged the expectation of life and correctly used results in the disappearance of all the troublesome symptoms of the disease, enabling the patient to live in comfort. "Insulin" treatment in many cases of diabetes must be continuous. If "Insulin" supplies are interrupted, the patient rapidly becomes worse and in severe cases may die. It is essential that continuous supplies of "Insulin" be available to the Australian public. The need for "Insulin" supplies would in itself justify the establishment of such an institution as the Commonwealth Serum Laboratories.

The laboratories assist in maintaining the health of the community by investigating outbreaks of disease amongst the lower animals, such as bubonic plague in rats and other diseases which are communicable to man. They perform an additional public health function in investigating existing epidemics and by the provision of calf lymph and other vaccines assist in the prevention of disease.

A public health laboratory is in existence in the main building at Royal Park for the purpose of carrying out special examinations of milk, food, water and sewage, together with other duties.

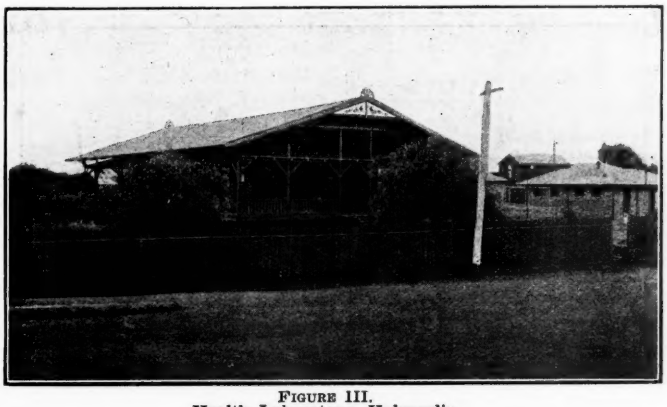

FIGURE III.
Health Laboratory, Kalgoorlie.

In this laboratory the whole of the personnel for the country health laboratories has received special instruction. Training has been given to medical officers and technical assistants comprising the staff of those laboratories and classes in bacteriology have been held for engineers and students in other professions.

Research work has been carried out continuously on the processes of preparation of the various biological products. In addition original work has been performed in the domain of pure bacteriology and upon the cancer problem.

Commonwealth health laboratories, eight in number, carry out diagnostic work in bacteriology, biochemistry and clinical pathology. In addition they investigate local outbreaks of disease affecting the community and act as depôts for the therapeutic agents supplied by the Commonwealth Serum Laboratories to combat such diseases. Certain of the laboratories have well-equipped X ray plants and cooperate with the local medical practitioners in the practice of radiology.

The country laboratories are of great assistance to the medical profession in the centres at which they are established, providing the means for a detailed laboratory examination of specimens, leading to the identification of the cause of the disease. From time to time special investigational work has been required of the country laboratories. Examples of this have been the diphtheria investigation at Bendigo, an inquiry into miner's phthisis at Kalgoorlie, into lead poisoning at Port Pirie and a typhus-like disease at Toowoomba.

The growth of the Commonwealth Serum Laboratories has been very considerable during the eight years it has been established. This rapid progress necessitated an additional wing being erected in 1922 and a large three storied building during the current year.

Past returns submitted by the country laboratories of the work done show that increasing use is being made by the medical profession of the facilities provided for them.

The country laboratories are undertaking combined inquiries into the cause and prevalence of disease throughout Australia.

Industrial Hygiene Division.

The Division of Industrial Hygiene was established in 1921 with a view to stimulating, and coordinating modern methods of preventive medicine for increasing the health, comfort and thereby the efficiency of the Australian worker.

Educational measures, such as service publications, public exhibits, addresses, are adopted in order to bring before the notice of employers, employees, the medical profession and the general public the advantages that result from the application of the principles of industrial hygiene.

Data on occupational morbidity and mortality are being collected and analyses made of the sickness and accident incidence among persons employed in government departments and private industries.

The organization of systems of medical service to employees is being encouraged and since the creation of the Division there has been a gratifying increase in the number of medical men, qualified nurses and dentists engaged in industrial medicine. The Division is acting as an information bureau on this subject and its advice is continually being sought by industrial managements, trade unions, the medical profession and other bodies. Uniform methods of recording the activities of these medical

services and the sickness and accident occurrence among employees have been organized by the Division and several government departments and private establishments now keep statistics on lines laid down by the Division.

All matters relating to the health and comfort of officers in the Commonwealth Public Service are referred to the Division. At both the General Post Office in Sydney and Melbourne there is a full time medical officer stationed to examine applicants for admission to the service and officers reporting sick on duty, to supervise all applications for sick leave and to maintain a strict surveillance over working conditions in the various Commonwealth offices.

The Division assists State authorities and other bodies by undertaking field investigations into the health of groups of workers. In 1922 a radiological examination was made of two hundred mine employees, Bendigo. In 1924 in cooperation with the New South Wales Board of Trade six hundred workers in sandstone were examined clinically and radiologically. In 1925 a medical officer of the Division acted as chairman of the South Australian Royal Commission on Plumbism which investigated the incidence and causes of lead poisoning among the employees of a lead smelters in that State. At the request of the Government of Western Australia in 1925 an examination was commenced of all metalliferous mine employees engaged in certain mining districts and this inquiry has just concluded, four thousand and sixty-eight men being examined both clinically and radiologically. Arrangements have been entered into with the State Government to follow on this work by annual radiological examinations of the men. At the request of the Federal Committee of the Australian Timber Workers' Union an inquiry is at present being made in the different States into the effects of wood dusts upon the health of workers. At the request of the Government of Tasmania an inquiry, involving the clinical and X ray examination of two thousand seven hundred and fifty workers, is to be commenced at an early date into the physical condition of the workers in the mining and metalliferous industries.

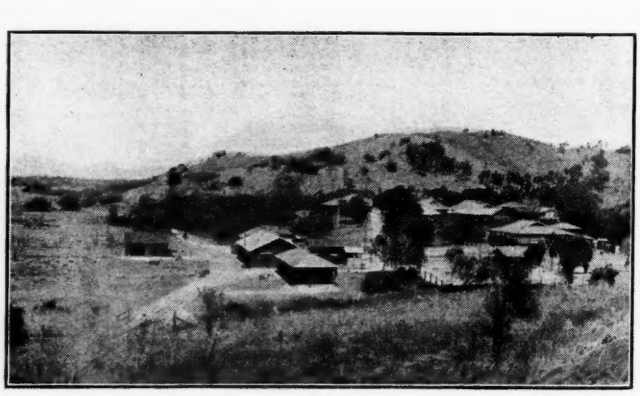

FIGURE IV.
Quarantine Station, Townsville.

To bring about uniformity in standards and practice with regard to the administration of State laws, conferences have been held between officials of the State Departments of Labour and the Commonwealth and State Departments of Health in 1922 and 1924 and these conferences are to be continued at two yearly intervals.

Medical officers in the Division must be informed in regard to influences affecting or threatening to affect injuriously the health of the industrial worker and must possess in addition to general medical knowledge special knowledge on the following subjects: Industrial medicine, including industrial toxicology, clinical industrial medicine, industrial psychiatry, nutrition, Röntgenology, industrial medical practice, including dispensary organization, personnel, methods, records, physical examinations, health education, factory hygiene, including besides general considerations of ventilation, illumination, general sanitation *et cetera*, an intimate knowledge of the science of konimetry, photometry, air analysis, industrial operation, including industrial organization and methods, labour legislation, laboratory work, including animal experimentations and physical problems referred to under factory hygiene, pathology, particularly with relation to industrial diseases.

Division of Tropical Hygiene.

The Division of Tropical Hygiene exercises the following functions: (i.) The study of hygienic conditions in tropical and subtropical Australia and its tropical dependencies, (ii.) the study of tropical and other diseases in these areas; (iii.) the study of environmental and sociological conditions in tropical Australia, as far as those are likely to affect human health and well being; (iv.) the systematic control of hookworm in all areas in which it exists in Australia; (v.) investigation of the vectors of malaria, filariasis and other insect borne diseases in tropical and subtropical Australia and the tropical dependencies, together with the conducting of mosquito surveys at the request of governmental or municipal authorities and otherwise; (vi.) the collection of sanitary and other data bearing on the foregoing matters and the publication of technical information calculated to be of service in securing the control of disease in the Australian tropics and subtropics; (vii.) the formulation of standards and methods for improving hygienic conditions in tropical and subtropical Australia and the tropical dependencies; (viii.) administrative control of the Australian Institute of Tropical Medicine, Townsville, and of the Health Laboratories at Rabaul, Townsville, Rockhampton and Toowoomba.

In addition it controls and operates quarantine stations and staffs at Darwin, Thursday Island,

Townsville and Brisbane, with part time quarantine officers at Cairns, Bowen, Mackay, Gladstone, Bundaberg and Maryborough. These perform services under the *Quarantine Act, Immigration Act* and *Navigation Act* for ten ports distributed along some two thousand four hundred miles of coast.

The Australian Institute of Tropical Medicine undertakes research into all matters affecting human health and well being in tropical Australia, collects and collates all available material bearing on that subject and makes it available for other Australasian workers and acts as a teaching organization for training medical graduates and others in tropical medicine and hygiene, an institute of reference and assistance for medical practitioners in the Australian tropics and an intelligence centre with respect to epidemic disease in tropical Australia. It also embodies a health laboratory.

The teaching of tropical medicine and hygiene is covered by an annual set course of some three and a half months. The Institute is very fully equipped for teaching purposes. Courses have been held in 1925 and 1926 and will be continued in May, 1927. Certificates are granted by the Department to those who attend the course and pass the examination. The course and examination are also recognized for the second part of the examination for the Diploma of Tropical Medicine and Hygiene of the University of Sydney. Arrangements are also made as occasion requires for instruction of medical graduates in tropical services who are unable to attend the set course.

The permanent medical officers of the Division comprise the Director, Division of Tropical Hygiene, the Director, Australian Institute of Tropical Medicine, three quarantine officers, four medical officers (laboratories) and four medical officers at the Australian Institute of Tropical Medicine. Two temporary, full-time medical officers are also employed in connexion with the work of the Hookworm Campaign.

There is no set division between the work of medical officers in the various sections and a wide and interesting field of tropical investigation is worked collectively. For example, an inquiry into beri beri amongst the pearling crews at Thursday Island was begun by the Quarantine Officer, Dr. Metcalfe, cooperated in by the Institute of Tropical Medicine and discussed by the Divisional Director at the beri beri meeting of the Far Eastern Association of Tropical Medicine in Tokyo. The outcome has been a definite fall in the incidence of the disease amongst the pearling crews. Another interesting investigation was conducted at Thursday Island in connexion with the Schick testing of children in a diphtheria free community. In Rabaul the Medical Officer in charge of the Commonwealth Health Laboratory, Dr. G. M. Heydon, by a careful series of systematic observations identified in 1923 the particular species of anopheline mosquito (*Aedes punctulatus*, Dönitz, var. *moluccensis* Swellengrebel) which conveyed malaria in the vicinity of Rabaul. Neither the German investigators nor the Australian military administration had succeeded in doing this, despite extensive resources and work. The Australian Institute of Tropical Medicine has constantly in hand a large field of investigational work, ranging from the serology of aboriginal bloods, to the epidemiology of the unclassified fevers of tropical Australia. The epidemiology of hookworm under Australian conditions is being systematically investigated in the field under direction and with cooperation from the Institute.

Division of Public Health Engineering.

The Division of Public Health Engineering was founded at the beginning of 1922 and was placed under the direction of Colonel F. F. Longley, an expert in sanitary engineering loaned to the Department by the International Health Board for a period of two years. During Colonel Longley's term of office Mr. A. Gordon Gutteridge, an Australian engineer, was granted a travelling fellowship by the International Health Board and spent more than a year abroad in America and Europe during which time he made an intensive study of the most modern applications of sanitary science. On his return to Australia Mr. Gutteridge assumed the position of Director of the Division of Sanitary Engineering, since renamed the Division of Public Health Engineering.

In the past this Division has carried out a considerable amount of useful work in collecting information and scientific data on such subjects as sewage disposal, water purification, mosquito elimination and the disposal of garbage and refuse and in disseminating such information among engineers actually engaged in the planning or control of such enterprises. It is realized that there is a definite need in the community for an office which has the necessary resources for collecting information on the more difficult problems of sanitation, and every effort has been made to build up an extensive library of current technical literature and to keep up-to-date a complete card index of the articles contained in these journals. That a considerable degree of success has been achieved along these lines is shown by the increasing number of the applications for information that are received from practising engineers. Not only are such queries answered as completely as possible from the resources of the office, but engineers having similar problems are brought in touch with one another to their mutual advantage.

In addition to the above service to the practising engineer, municipalities and State Governments are assisted by personal investigations into and reports on specific problems. Service publications have been issued, articles contributed to the technical press and papers have been read before professional societies.

The further programme of the Division includes, in addition to a continuation of past activities, the carrying out of an extensive programme of research.

Office.	Number of positions.	Salaries.		
		Minimum.	Maximum.	Increments.
		£	£	£
Director-General of Health	1	1,500	2,000	100
Divisional Director	4	1,200	1,400	50
Director, Institute of Tropical Medicine, Townsville	1	1,000	1,250	50
Chief Quarantine Officer	2	900	1,100	50
Assistant Director	2	876	1,020	48
Medical Officer (two positions in Division of Industrial Hygiene)	2	780	852	36
Medical Officer (others)	23	708	852	36

For this purpose two laboratories are to be established.

One, a chemical laboratory, will be at the Mont Park Hospital of the Insane. At this laboratory an intensive study is to be made of the question of nightsoil disposal by all of the known methods. This investigation will include close chemical and bacteriological observation of the progressive changes occurring in nightsoil pans, in chemical closets and in small sewage tanks. In addition a study will be made of the question of the bulk handling of nightsoil, the depôt of the Melbourne and Metropolitan Board of Works at Janefield, near Mont Park, being convenient in this respect. The other laboratory will be for the conduct of purely physical work and will be established at the Commonwealth Serum Laboratories at Royal Park. In this laboratory exhaustive researches are planned into sewerage hydraulics especially in regard to house connections and plumbing fixtures.

Salaries.

The salaries attaching to the various positions open to medical men in the Department are given in the accompanying table.

Medical officers who have been in receipt of their maximum salary for twelve months and who have obtained the Diploma of Public Health or the Diploma of Tropical Medicine or, where attached to the Commonwealth Serum Laboratory or country laboratories of the Health Department, have completed such courses of study and passed such examinations as are prescribed by the Director-General, which courses and examinations shall be in the opinion of the Director-General of a standard not lower than that required for the Diploma of Public Health, shall advance to the maximum of £948 by two annual increments of £48, subject to the conditions mentioned in Clause 2.

II.

THE PUBLIC HEALTH SERVICE OF NEW SOUTH WALES.

CONTRIBUTED BY SPECIAL REQUEST BY DR. R. DICK, DIRECTOR-GENERAL OF PUBLIC HEALTH OF NEW SOUTH WALES.

THE care of the public health in New South Wales is vested in local authorities who execute the *Public Health Act* under the control and supervision of a central authority. Within municipalities and shires the municipal council or the shire council is the local authority and outside these areas the duties of a local authority are performed by police officers specially appointed.

The powers and duties of control are exercised by the Board of Health consisting partly of eminent medical practitioners and partly of laymen. All the members of the board are appointed by the Government. The President of the Board is a government official and permanent head of this branch of the Department of Public Health; he also bears the title of Director-General of Public Health.

The State possesses as the basis of its public health machine a *Public Health Act* framed more or less roughly upon the model of the English *Public Health Act* of 1875, but varying widely from the model in many directions to meet the special needs of a young and sparsely populated country. Many useful provisions for the control and safeguarding of the public health are, however, to be found in legislative enactments outside the *Health Act,* more particularly in the *Local Government Act.* There is a strong tendency in the public health legislation of this State to control sanitation by means of by-laws and regulations which owing to their flexibility are specially adapted for this purpose.

The Director-General's branch includes two divisions, one controlled by the Board of Health and the other by the Director-General of Public Health. Their functions are closely coordinated and the Director-General is *ex officio* President of the Board of Health, but the spheres of action of the two branches are separate and on the whole well defined, though the same staff serves both. The functions of the board (in the main advisory and supervisory) are administrative and executive under several statutes: *Public Health Acts, Dairies Supervision Act, Private Hospitals Act, Noxious Trades Act, Cattle Slaughtering and Diseased Animals and Meat Act.* It discharges important advisory duties towards the Minister of Public Health and the Government and it exercises supervision over the manner in which local authorities carry on their public health functions. Except indirectly through its President the Board of Health has no control over the officers of the Department. The Director-General of Public Health controls the multifarious business of the medical department of the public service,

including the medical examination of candidates for admission to the service and for retirement on the ground of ill health, medical police and gaol work, the medical care of aborigines and the administration of State hospitals. He has control of the Government Analyst's branch and the State Microbiological Laboratory and has the additional title of Inspector-General of Charities and Public Hospitals with the powers thereby implied in respect of all hospitals excepting mental hospitals.

The New South Wales Health Department comprises an administrative staff of four medical officers all with special public health qualifications, including one who is also Director of Maternal and Baby Welfare, a pathological and microbiological laboratory staff, with four medical officers all specially qualified in their own subject, and a medical officer of industrial hygiene with two assistants. The members of this staff visit, as necessary, country towns throughout the State and make inquiries and investigations into all matters concerning the public health which appear of sufficient importance to warrant such action, including the administration of hospitals, individual cases of rare or unusual sickness, outbreaks or threatened outbreaks of illness and reported instances of neglect on the part of local authorities to carry out public health statutes or regulations.

The staff of the Government Medical Officer for Sydney constitutes an integral part of the Department. It consists of the Government Medical Officer for Sydney and the second Government Medical Officer. The Government Medical Officer exercises the duties of police surgeon, has control of the medical work connected with the Coroner's Department and is the Government expert in all medico-legal matters. He also, together with the second Government Medical Officer, controls the Hospital Administration Depôt, which deals with the admission to hospitals of the indigent sick.

There are also connected with the Department three lay staffs: (*a*) six sanitary inspectors, (*b*) fifteen pure food inspectors and (*c*) sixteen dairy inspectors. These three last named staffs are continually traversing the metropolitan and country districts, examining the health conditions in the different centres of population and reporting on them to head office. On these reports appropriate action is always taken. The ideal the Department sets itself is to make a complete sanitary survey of every town of the State once in three years.

There is also a staff of upwards of one hundred fully trained, certificated nurses under the control of the Director of Maternal and Baby Welfare, who carry on the work of the various baby health centres in suburban and country districts.

Outside head office there are two full time medical officers of health with special public health qualifications. These officers belong to the Department of Public Health and are appointed and paid by Government. They devote the whole of their time to their duties and receive salaries which are more or less commensurate with the importance of the duties they perform. They are stationed at Sydney and Newcastle, the two principal centres of population in the State, embracing together more than half its total population. The city of Broken Hill which is so isolated that it would be impossible to combine it with any other district, was provided for many years with a part time medical officer of health. Provision has been made recently for the appointment of a whole time medical officer of health for this district.

A scheme has been prepared for subdivision of the remainder of the more settled portions of the State into five health districts and for appointment of a whole time medical officer of health in charge of each district. The scheme provides for each medical officer to have at his disposal a bacteriological laboratory and a sanitary staff to assist him in carrying out his duties. The districts were delimited with reference to the existing systems of railway communications. These appointments have not yet eventuated.

In every town of any importance in New South Wales there is a government medical officer. These officers outside Sydney have no fixed salary or routine duties and but few powers, but to them is given any government medical work which may arise in their districts and they may be required to report on any subject. For any work done by them they are paid by fees according to a fixed scale. Although these government medical officers have no definite routine public health duties, of recent years their services have been increasingly availed of to carry out special public health duties in conjunction with the department, such, for instance, as investigations into outbreaks of diphtheria and typhoid fever, reporting on individual cases of illness which are regarded as suspicious and so on.

Government Hospitals.

The Director-General of Public Health has the administration of thirteen hospitals and institutions which are entirely supported by the State. They are as follows:

(1) The Coast Hospital for patients suffering from acute medical, surgical and infectious conditions, including a leper lazaret. The beds number 739, comprising 406 medical and surgical, 311 infectious and twenty-two in the lazaret.

(2) Rookwood State Hospital and Asylum for aged and infirm men. The beds number 747 in the hospital division and 650 in the asylum division, making 1,397 in all.

(3) Liverpool State Hospital and Asylum for aged and infirm men. The beds number 296 in the hospital division and 254 in the asylum division, making 550 in all.

(4) Newington State Hospital for aged and infirm women. The beds number 422 in the hospital division and 306 in the asylum division, making 728 in all.

The patients treated in the hospital divisions of the Rookwood, Liverpool and Newington institu-

tions are those suffering from chronic affections, chiefly aged people. As is the case also with the inmates of the asylum divisions, they come from all parts of the State.

(5-6) The Parramatta asylums for aged and infirm men:

(*a*) Macquarie Street Asylum for the blind and for men suffering from defective sight and senility, with 225 beds.

(*b*) George Street Asylum for aged and infirm men, with 340 beds.

(7) Montrose Maternity Hospital, Burwood, with twelve beds and twelve cots.

(8) Fernleigh Rest Home for Women, Ashfield, for antenatal and postnatal care, with seventeen beds and nine cots.

(9) Lady Edeline Hospital for Babies, Rose Bay, with forty-one cots and five beds for mothers.

(10) Strickland Convalescent Hospital for Women, Rose Bay, with thirty-two beds.

(11) Denistone House Convalescent Hospital for Men, Eastwood, with thirty-seven beds.

(12) Waterfall Sanatorium for Consumptives, with 417 beds, 293 for males and 124 for females.

(13) David Berry Hospital, Berry, South Coast, a general hospital, with twenty-two beds and four cots.

The salaried medical staff of this department is indicated in the following list.

Department of Public Health, Medical Establishment, Head Office (Administrative):

Director-General of Public Health.

Senior Medical Officer of Health and Director of Maternal and Baby Welfare.

Two Assistant Medical Officers.

Government Medical Officer and Police Surgeon.

Second Government Medical Officer.

Microbiological Laboratory:
Principal Microbiologist.
Three Assistant Microbiologists.

Medical Officer of Industrial Hygiene.

Medical Officers of Health:

Metropolitan District.
Hunter River District.
Broken Hill.

Coast Hospital:

Medical Superintendent.
Deputy Medical Superintendent.
Three senior Assistant Medical Officers.
Six Junior Medical Officers.

Rookwood State Hospital and Asylum:

Medical Superintendent.
Senior Medical Officer.
Junior Medical Officer.

Liverpool State Hospital and Asylum:

Medical Superintendent.
Junior Medical Officer.

Newington State Hospital and Asylum for Women:

Medical Officer (female).

Waterfall Sanatorium for Consumptives:

Medical Superintendent.
Assistant Medical Officer.

David Berry Hospital:

Visiting Medical Officer (part time).

Lady Edeline Hospital for Babies:

Visiting Medical Officer (part time).

State Asylums for Aged Men, Parramatta:

Visiting Medical Officer (part time).

The whole of the personnel of this establishment is composed of civil servants, excepting in the case of part time officers. These latter are attached to establishments where the whole time of an officer could not be profitably utilized and are medical practitioners already engaged in private practice in the neighbourhood. The recruitment of this staff is conducted through the Public Service Board. The senior positions are filled by the promotion of junior officers. Among the medical officers of health and the officers of the administrative staff a diploma in public health is required. For admission to the bacteriological staff evidence of some special bacteriological training is necessary.

Junior medical officers on the staffs of the State hospitals are selected from young medical graduates preferably with some previous experience on the house staffs of metropolitan hospitals.

III.

PUBLIC HEALTH SERVICE IN VICTORIA.

CONTRIBUTED BY SPECIAL REQUEST BY DR. E. ROBERTSON, THE CHAIRMAN OF THE COMMISSION OF PUBLIC HEALTH OF VICTORIA.

PUBLIC HEALTH in Victoria is administered by the Minister of Public Health, the Governor-in-Council the Commission of Public Health and municipal councils.

Powers of the Minister.

All powers, rights and authorities conferred or imposed on the Commission by any Act shall whenever he deems fit be exercisable by the Minister and when so exercised shall supersede any act, order, direction or notice of the Commission.

A special power is conferred on the Minister to arrange with managing authorities of hospitals or with medical practitioners or medical officers appointed under the *Health Act* or with dentists within the meaning of the Part 11 of the *Medical*

Act, 1915, for the treatment of physical defects discovered in school children by medical inspection under the *Health Act* or any other act.

Special Powers of the Governor in Council and of Municipal Councils re Curative Treatment.

The Governor-in-Council may, subject to the *Public Service Acts* or by special contract, appoint or employ medical practitioners to be Government medical officers.

Any municipality may appoint or employ medical practitioners as municipal medical officers.

The duties of such medical officers are: (i.) to give medical attendance to persons who are entitled to receive medical attendance pursuant to the rules of any friendly society which is registered under the *Friendly Societies Act*, 1915, and which enters into an agreement with the Minister or the municipality (as the case may be); (ii.) to perform such other medical duties as are agreed upon or prescribed by the Governor-in-Council.

These provisions were inserted in the Act during its passage through the House in 1919 when the lodge dispute was at its height.

Constitution and Powers of the Commission.

The Act provides that the Commission shall consist of the Chief Health Officer and six members appointed by the Governor-in-Council.

Not more than two medical practitioners shall be appointed. Three of the members shall be appointed as representing municipal councils.

The powers and duties of the Commission are:

1. To administer the *Health Act* generally;
2. To promote the prevention, limitation and suppression of infectious and of preventible diseases;
3. To report to the Minister upon matters affecting the public health and upon any amendments which it thinks advisable in the law relating thereto and upon matters referred to it by the Minister;
4. To promote or carry out researches and investigations and to make inquiries in relation to matters concerning the public health and the prevention or treatment of disease;
5. To publish reports, information and advice concerning the public health and in particular concerning the prevention and control of disease and the education of the public in the preservation of health;
6. To advise and assist councils in regard to matters affecting the public health;
7. To prepare regulations under this Act for submission to the Governor-in-Council;
8. To prepare model by-laws for adoption by councils pursuant to this Act;
9. To make or cause to be made such inquiries as it thinks fit in relation to matters concerning the public health in any place or with respect to any matter to which its approval or consent is required.

The Commission has no control over the departmental staff. It works by means of resolutions which are remitted to the department to be carried out.

Departmental Staff.

The Act provides that there shall be a Chief Health Officer who shall be permanent head of the Department of Public Health; and a sanitary engineer, a secretary and such health officers, inspectors, clerks and other officers as are deemed necessary.

District Health Officers.

The Act provides for the division of the State into health areas, each of which is in charge of a district health officer.

The State is divided at present into six health areas, the central comprising the district included within a radius of approximately forty miles and five rural areas. Each district health officer is assisted by one or more health inspectors.

Experience has shown the desirability of areas being only so large as to permit of the district health officer returning to his home town each night. Under present conditions this cannot be arranged for.

Health Officers.

All medical officers not being district health officers are called health officers.

Provision has been made for the appointment of five health officers as follows:

1. Assistant health officer to the district health officer for the central district which includes approximately 850,000 of population,
2. Venereal diseases officer,
3. Infectious diseases and industrial hygiene officer,
4. Infant welfare officer (part time),
5. Tuberculosis officer.

School medical inspection is carried out by medical officers attached to the Education Department. District health officers, however, carry out a considerable amount of school medical inspection on behalf of the Education Department.

No person may be appointed as a district health officer unless he is the holder of a degree or diploma in public health and such qualification is required of all full time health officers.

No provision has as yet been made for the training of recent graduates for a public health career, but the matter is under consideration, depending to a great extent on the facilities provided at the University for public health education.

Bacteriological Work.

No bacteriological work is undertaken directly by the Department. Arrangements have been made with the University for all such work to be done at the University laboratory, for which a subsidy of £2,500 *per annum* is paid.

Municipal Officers of Health.

Every council is required by the *Health Act* to appoint a medical officer of health.

The Act provides that every medical officer of health shall:

(*a*) Keep himself at all times properly informed as to public health and sanitary circumstances of the municipal district and make such inspections and inquiries

as are necessary for that purpose and report to the Council on any matter or thing relating thereto which in his opinion should receive its consideration;
(*b*) Furnish to the Council monthly reports and an annual report on the public health and sanitary circumstances of the municipal district and such special reports relating thereto as the Council requires and
(*c*) Furnish direct to the Commission such special reports as the Commission requires.

In addition the medical officer of health is required to carry out such clinical work relating to public health as the Council or Commission requires.

Remuneration of Medical Officers.

The salary of the Chief Health Officer ranges from £1,000 to £1,100.

The salary of a district health officer begins at £700 *per annum* with £50 annual increments to £850.

The salary of the health officers ranges from £700 to £793.

The salary of the part time departmental medical officers depends on the nature of work to be performed and the time occupied in carrying out such work.

Two special appointments have recently been made, Director of Infant Welfare Work and Director of Tuberculosis Work. The former receives a salary of £450 on a half-time basis. The latter appointment carries a salary of £1,000 with right of consulting practice.

The salaries of municipal medical officers of health range from £10 to £300 for part time service.

There is only one full time municipal medical officer in Victoria; he acts for the City of Melbourne.

This position carries a salary of £1,100.

Part time municipal medical officers may receive travelling allowances and special remuneration for special work; this depends on the terms and conditions of appointment.

Treatment of School Children.

So far no arrangements have been made for the treatment of physical defects (including dental defects) by medical practitioners and dentists; hence the remuneration for such work cannot be stated.

Treatment of Lodge Patients.

Although power was given to the Governor-in-Council and to municipal councils to provide for the treatment of lodge patients in 1919, so far no medical officer has been appointed either on the basis of a yearly salary or on the basis of prescribed rates of payment.

Consequently no information can be given as to the remuneration of such work.

IV.

THE PUBLIC HEALTH SERVICE IN QUEENSLAND.

CONTRIBUTED BY SPECIAL REQUEST BY DR. J. I. MOORE, THE COMMISSIONER OF PUBLIC HEALTH OF QUEENSLAND.

PREVIOUS to 1900 the sanitary laws of Queensland were administered by a Central Board of Health. In January of that year Dr. Ham was appointed Commissioner of Public Health for the whole State and the operations of this Department came into existence, the Commissioner's duties being to carry out the provisions of the *Health Act*, 1900, under the control of the Home Secretary, who in addition to his other duties has been specially allotted that of administering the *Health Acts*. The headquarters of the Health Department were originally situated in the old Custom House near to Kennedy's Wharf, Brisbane. After a few months the office of the Commissioner was removed to the Treasury Buildings in Queen Street. In 1917 the office was again moved, this time to the Old Court House, Hope Street, South Brisbane, and up to the present time has remained the headquarters of the Department. During the early stages of administration the Commissioner had the assistance of a Central Board of Health which in 1910, being no longer considered necessary, was abolished.

The Health Department's Bacteriological Laboratory was originally situated in College Road, but later followed this Department to Hope Street, where it is under the control of the Microbiologist with a staff of two assistants, two laboratory attendants, a typiste and a glass cleaner. During the year 82,538 specimens were examined.

The head office staff of this Department consists of a Commissioner (Dr. J. I. Moore), a health officer (Dr. J. Coffey), secretary, senior clerk, four clerks, two typistes, two messengers and a staff nurse. A part time tuberculosis officer examines all patients with pulmonary tuberculosis referred to this Department and arranges for the treatment of patients in the sanatorium at Dalby or for admission to the Chronic Diseases Hospital (Diamantina). Four part time medical men attend to the venereal diseases work in Brisbane, where six day and five night clinics are provided, females being attended at doctors' surgeries as private patients for the Department. Clinics are also established in the principal centres throughout the State for the treatment of males and females suffering from venereal disease. A lock hospital for the treatment of women of the unfortunate class is provided in Brisbane and provision for these women is also made at hospitals in other centres. The inspectorial staff consists of two Chief Inspectors with fifteen inspectors and two assistants. Branch offices are established at Cairns, Townsville, Rockhampton and Toowoomba under certificated resident inspectors and arrangements are being made to open additional offices at five other centres, the staff for which will be transferred from Brisbane, this being made possible through the formation of the Brisbane City Council's Health Department, thus relieving the State Department of much inspectorial work in the metropolitan area.

Appointments to the inspectorial staff are made from persons holding the Certificate of the Royal Sanitary Institute (London) or other recognized qualification. Experience shows that the cadet system now in vogue in this Department has proved

very successful in securing efficient officers well versed in the inspectorial work of the Department.

Extensive powers under the *Health Acts* and regulations are imposed on local authorities in the interest of public health and it is the duty of the State Health Department to insure that the local authorities carry out the duties imposed on them in preventive medicine. In addition to this supervision the advice and assistance of the Department is freely given in cases of outbreaks of disease or in modernizing or improving obsolete and unsatisfactory methods of sanitation.

In October, 1925, the various eighteen councils within the metropolitan area were combined and now function as the City of Brisbane Council. This new authority has formed a city health department and it is hoped that this centralization of health work will be the means of improving the health and sanitation of the metropolitan area.

Rural local authorities are required to carry out the provisions of the regulations formulated by the State Health Department in dealing with infectious diseases as well as sanitation. Under Section 29 of the *Health Acts* councils are empowered to and when required by the Commissioner shall appoint medical officers of health, health inspectors and so forth. These appointments must be approved of by the Commissioner and they cannot be terminated without his consent. Some one hundred and thirty-six local authorities have appointed medical officers of health and twenty-three certificated inspectors have been appointed, principally for contiguous areas and further additional appointments are under consideration.

The Department of Public Instruction continues as in the past to confer with this Department concerning matters pertaining to health administration in schools and it is pleasing to report that the Department has secured the services of a whole time medical officer, Dr. L. St. V. Welch, who is reorganizing school medical work in this State.

Commonwealth laboratories have been opened in Townsville, Rockhampton and Toowoomba and are cooperating with this Department in the examination of specimens and by this means some saving of time is occasioned in country districts in obtaining early results of laboratory examinations.

Lectures are still continued on behalf of the Royal Sanitary Institute by the Board of Examiners of which the Commissioner is Chairman and thus assist in preparing candidates for the Certificate of Competency. At a recent examination thirty-four candidates entered and twenty-three were successful in obtaining the inspector's certificate.

Venereal diseases are carefully watched and as a result of experience it was considered necessary to tighten up the venereal diseases regulations by preventing food handlers from continuing their occupation of waiters, waitresses, bar attendants, bakers, pastry cooks and the like until receiving their certificate of apparent freedom from disease.

The Department has been paying special attention to the sanitary services throughout the State, especially insisting upon the adoption of flyproof, ventilated cabinets and it is very noticable in the areas in which same have been adopted, that the incidence of fly borne typhoid fever has been greatly reduced and almost abolished. One council in particular advised the Department that their cost for treating typhoid fever and diphtheria averaged £50 to £60 a month, but since carrying out the Department's requirements as above mentioned for nine months they had no bills to pay and decided to close the infectious disease hospital. With such an example to quote the Department has found that other areas are only too willing to fall into line and thus save the ratepayers. This proves how necessary it is to make local authorities responsible for the treatment of preventible diseases.

Nurses' Registration Board.

The functions of the Nurses' Registration Board continue to be carried out in a satisfactory manner. The new system of conducting sectional examinations for pupil nurses, in lieu of the old system requiring them to sit for the whole of the required subjects at a final examination after completion of their full hospital training, is proving advantageous to the trainees. It facilitates the work of the lecturers and does not unduly interfere with the work of the hospital.

The matter of accepting nurses from overseas and other States without having to submit themselves for reexamination has occasioned considerable correspondence with a view to attaining reciprocity. It is now pleasing to record the fact that arrangements have been finalized whereby nurses whose period of training is equivalent to that required by the Board and who hold certificates from recognized nursing associations of having passed a qualifying examination, are eligible for registration in this State by paying the prescribed fee of thirty shillings. This arrangement will be extended as time permits to other countries which are agreeable to extend similar treatment to nurses trained in Queensland and to prevent them from being placed in an invidious position should they elect at any time to visit other places to follow their profession.

Leper Lazaret.

Although the area set apart for the Peel Island Lazaret was originally gazetted under the *Quarantine Act*, the Commonwealth authorities exercise no control over the establishment, which is dealt with under the *Leprosy Act* of 1892 (Queensland) and is administered by the Home Secretary through the Commissioner of Public Health. The number of patients in the Lazaret at present amounts to seventy-five, including thirty-two white males, ten white females, twenty-nine coloured males and four coloured females.

General.

As space will not permit of a full and complete account being furnished regarding the administration of this Department's functions, the following

brief summary may suffice. First and foremost, similarly to all other health departments, the main function of the Department is the prevention and eradication of infectious disease, the control of foods and drugs, as well as the licensing of milk vendors, poison vendors, the supervision of bakeries, hotels and so forth, sanitation, covering drainage and sewerage, industrial nuisances, rat destruction, nightsoil and garbage removal services *et cetera*.

V.

PUBLIC HEALTH SERVICE IN SOUTH AUSTRALIA.

THE *Health Act* of South Australia bears the date of 1898. It is unnecessary for our present purpose to endeavour to determine whether this legislative measure was satisfactory in the light of the knowledge of hygiene and preventive medicine of the end of last century or whether it was, as were the majority of similar laws of that time, a complicated legal document unlikely to serve a useful purpose. In view of the progress that has been made within the last quarter of a century and of the fact that a great deal of the mythical teaching of the past has been replaced by doctrines based on the ætiology of disease, this act is not now a good basis for the administration of measures of preventive medicine. According to the Act the State is divided into districts. Each district forms a unit for administrative purposes and is under the control of municipal or district councils. In some instances two or more district councils have combined to form one local health authority. The central administration of the legislative measures is vested in the Central Board of Health which comprises the Chairman, a medical practitioner who is the departmental head, two permanent members appointed by the Governor and two members appointed every two years by the local health authorities. One of the elected members represents the metropolitan and suburban authorities, while the other is the representative of the country boards or local authorities. There are twenty suburban and one hundred and sixty-four country local authorities. The Central Board of Health is directly responsible for the administration of the health laws in sparsely populated districts.

The local boards are described as "sanitary executive" bodies. They have powers of raising rates for special sanitary purposes. Each board is required to appoint an officer of health who is not always a medical practitioner. The duties of the officer of health are defined in the Act as those of an inspector. In addition the Central Board may require a local board to appoint sanitary inspectors who have extensive powers. It will be noted that reliance is placed on the performance of the duties of trained sanitary inspectors rather than medical practitioners for the combating of disease. In the larger and more active metropolitan districts the medical officer of health is a medical practitioner. He is given a reasonable degree of freedom of action and is able to develope his work as medical officers of health in other States can.

In accordance with the provisions of the *Health Act* and its regulations the number of infective diseases that have to be notified, is large. They include diphtheria, erysipelas, scarlet fever, typhus fever, enteric fever, puerperal fever, relapsing fever, anthrax, trichinosis, cerebro-spinal meningitis, malaria, pertussis, morbilli, tuberculosis, favus, bilharziosis, influenza, leprosy, cholera, yellow fever, variola and plague. The official list contains several synonyms, such as scarlatina as well as scarlet fever, some ambiguous terms, such as membranous croup and pneumonic influenza. It may be mentioned that the dangerous epidemic diseases, plague, yellow fever, cholera, typhus fever and so forth are notifiable to the Commonwealth authority. It is difficult to understand how the information gained by means of notification can be utilized for the prevention of these diseases in view of the fact that so few medical practitioners are charged with hygienic duties. The Chairman is the only medical officer of the Central Board of Health and apparently he does not enlist the cooperation of his colleagues. Throughout the greater part of the State the work is conducted by sanitary inspectors and nurses, but not by medical practitioners. A radical change will have to be effected in the methods in South Australia if the proposals of the Royal Commission of Health are to be carried into effect. At present reliance is placed on the isolation of persons suffering from contagious or infectious diseases (apparently all infective diseases are not regarded as infectious), disinfection of premises and the giving of advice concerning infectious diseases. The Central Board of Health prescribes the measures, but it is doubtful whether the local boards apply them.

VI.

THE PUBLIC HEALTH SERVICE IN WESTERN AUSTRALIA.

COMPILED FROM INFORMATION KINDLY PLACED AT OUR DISPOSAL BY DR. R. C. EVERITT ATKINSON, COMMISSIONER OF PUBLIC HEALTH OF WESTERN AUSTRALIA.

FORTY years ago an attempt was made in Western Australia to introduce legislation for the improvement of the health of the community. Prior to 1886 a few acts and ordinances had been in force for the control of slaughter houses and of the slaughtering of sheep. The *Health Act* of 1886 was planned on lines that have become familiar. A central board of health and local boards were established. The former comprised a medical practitioner, a civil engineer, a builder and two other persons. It had the function of approving or disapproving the actions of the local boards, of sanctioning the by-laws drawn up by the local boards,

of exercising a supervisory power over the local boards and if necessary of enforcing the provisions of the Act on the local boards. The local boards at first comprised the mayor of the town and two other persons appointed by the Governor. Later the municipal councils became the local health authorities. It appears that the measures aiming at the control of infective diseases relied mainly on the removal of infected persons from contact with healthy persons, on the disinfection of premises, on general sanitary control, on the provision of hospitals for patients suffering from infectious diseases which had been proclaimed as notifiable diseases, and on similar procedures. During the first ten years of its existence the Central Board of Health seems to have taken its responsibilities lightly. The task of taking steps to check epidemics of disease was left to a large extent to the local health boards. The staff and equipment of the Central Board were unsuited for its purpose. In 1900 some progress was made when plague occurred in the Colony. In 1903 a bacteriological laboratory was instituted primarily for the purpose of enabling the Central Board to have investigations carried out into the nature of outbreaks of disease and other hygienic problems. At the same time pathological specimens submitted to the laboratory by private practitioners were examined and reports on them were sent to the practitioners. In 1906 medical inspection of school children was attempted on a small scale. In 1908 the Central Board was further charged with the inspection and registration of factories. It soon became evident that the system of entrusting the important work of safeguarding the health of the community to local health authorities, even when under supervision of the Central Board of Health, was highly unsatisfactory. In 1911 a new *Health Act* was passed. According to this measure the administration of the laws governing the health of the community was vested in one individual, the Commissioner of Public Health. The Commissioner was given control over measures having for their object the combating of infective disease, over State hospitals and sanatoria, over sanitary matters and over many other hygienic activities. A committee was created by the provisions of the Act for the purpose of setting up standards for foods and drugs, while the registration of nurses and of midwives was placed in the hands of a board consisting of the Commissioner, two other medical practitioners and two nurses holding the position of matron at a recognized hospital. In 1915 an amendment was introduced rendering venereal diseases notifiable, although the name of the patient was not to be disclosed unless he failed to remain under treatment by a medical practitioner. According to the amendment any one other than a medical practitioner who treats a person for venereal diseases renders himself liable to heavy penalties, while a person who knowingly infects another person with one of these diseases, is liable to a penalty of fifty pounds or may be sentenced to imprisonment with hard labour for six months.

The authorities constituted by the Act are the Governor-in-Council, the Minister of Public Health, the Commissioner of Public Health, the municipal councils, road boards and local boards. The Commissioner has general supervisory powers over his department and over the local health authorities. In districts where no health authority exists, the Commissioner exercises the powers and bears the responsibilities of the local authority. He can order the appointment of a medical officer of health in the area of any local health authority and his sanction is required before such an officer can be appointed. The local authority is required to carry out the provisions of the *Health Act* and its regulations.

The department employs six full-time medical practitioners: the Commissioner of Public Health and Principal Medical Officer, the Medical Officer of Health and Assistant Inspector of Hospitals, the Bacteriologist and three Medical Officers of Schools. The Commissioner has control of twenty-eight State hospitals, one sanatorium for tuberculous patients, a maternity hospital and training school, two homes for the aged and forty-six subsidized hospitals. He is Chairman of the Pure Foods and Drugs Board, the Nurses' Registration Board and the Midwives' Registration Board. His salary ranges from £960 to £1,200 *per annum*. The Medical Officer of Health holds a position, the salary of which starts at £636 and rises to £804, while the Bacteriologist commands the same salary as the Medical Officer of Health. Medical officers of health appointed under local authorities are usually part time and are paid salaries varying according to extent, importance and population of the district.

It may be mentioned that the Commissioner of Public Health is given very wide powers and in the exercise of these powers, his authority in practice is unchallenged. It is true that the Minister may override any action or order of the Commissioner, but it is obvious that no Minister is likely to embarrass the permanent head of his department in matters demanding professional knowledge and experience. The present Commissioner enjoys the confidence of those to whom he is responsible, and the work of his department is rendered all the more effective because of the unusual freedom granted to the Commissioner by the Act. He is handicapped by the fact that he has relatively little support, notwithstanding the extent of his responsibility. Western Australia has a population of well over a third of a million human beings and its area is immense. During the past ten or twelve years there has been great progress in the legislation for the improvement of the health of the people and in the methods of administration and in some instances the department in Western Australia has acted as pioneer. Despite its geographical isolation, it may be anticipated that the department in Western Australia will continue to expand and will in the future offer to a considerable number of competent practitioners a career in preventive medicine.

VII.

THE PUBLIC HEALTH SERVICE IN TASMANIA.

THE Government of Tasmania does not evince a deep concern in the maintenance of the health of the community. In 1903 Parliament found itself compelled to put a stop to a highly deplorable state of affairs in regard to the administration of the health legislation which was vested in a Central Board of Health. A new act was passed according to which the Director of Public Health was given complete control with extensive powers. The remuneration of £900 a year offered is quite inadequate to command the services of a highly trained and efficient practitioner save for relatively short periods. The history of the department can be discovered in the pages of this journal since its establishment in 1914. It would serve no useful purpose to recall some of the expensive mistakes of the Government, although it might be imagined that the lessons of the past would lead to the search for the causes and the introduction of remedies. At present the office of Director of Public Health is vacant, not for the first time. A highly competent officer held the position for a short period, but he was permitted to seek a better position elsewhere, owing to the short-sightedness of the Government. The duties attaching to the office are the administration of the *Public Health Act, Venereal Diseases Act, Food and Drugs Act, Places of Public Entertainment Act, Hospitals Act* and *Midwives Act*. He is required to fill the position of Chief Quarantine Officer under the Commonwealth Department of Health.

There is a full-time medical officer of health for the city of Hobart. The Act empowers the Director of Public Health to enforce work necessary for the preservation of health when the local authorities fail to carry it out, but in the absence of a Director the matter is left in non-medical hands, save in Hobart. The staff of sanitary inspectors is presumably required to control the municipal authorities, but it is difficult to understand how any scheme of modern preventive medicine can be put into effect under the existing conditions. Compulsory notification is required, but we venture to question its value at present for the greater part of the State.

School Medical Services.

I.

SCHOOL MEDICAL SERVICE OF NEW SOUTH WALES.

CONTRIBUTED BY SPECIAL REQUEST BY DR. HARVEY SUTTON, O.B.E., PRINCIPAL MEDICAL OFFICER OF THE DEPARTMENT OF EDUCATION, NEW SOUTH WALES.

THE School Medical Service of the Department of Education of New South Wales was reorganized on a full time basis in the year 1913 and the policy was laid down that every school should be visited every three years and a complete medical examination of every child carried out at each visit. In addition to inspection treatment was arranged in rural districts as well as the metropolitan area for dental defects and a travelling oculist in charge of the travelling hospital with a staff of two dentists was also allotted to remote rural areas. The present staff consists of a Principal Medical Officer and eight metropolitan and ten country medical officers, including two travelling oculists. In addition eleven travelling dental clinics, consisting of dentist and dental assistant, are allotted to rural areas and eight part time dentists deal with metropolitan needs. Of the latter two are on the staff of the Children's Hospital Out-patients' Department, where dental treatment is carried out as a preliminary to operation on the nose and throat. This feature particularly attracted the attention of the members of the American College of Surgeons who in recent years visited and reported on Australian hospitals. Follow-up work is conducted in the city by nine school nurses. The clerical work involved is considerable and requires the services of a secretary and eleven clerks.

The duties of a school medical officer are primarily those of medical examination of school children in order to observe any defects interfering with the educational progress or hampering the physical development of the child. In addition a sanitary inspection is conducted of school buildings and playgrounds and meetings are held at which parents may attend not only to receive information concerning the defects found in the school children, but to receive instruction on the simple laws of health and the essential requirements of child life.

Investigations are also carried out by school medical officers individually and by the staff as a whole. During the past year, for example, information was gathered concerning the amount and degree of backwardness and mental deficiency in school children and the frequency and relative importance of crippling conditions, together with individual investigations into goître and acute rheumatism.

The routine work of the school medical officer consists of examining some forty children or so a day, the findings being recorded on a child's card in such a way that notifications can be posted to the parents when the cards are handled by the clerical staff. Before each child is examined, there is available the previous history of disease *et cetera* which has been obtained from the parents' circular and transcribed on the child's card by the teacher, together with any observations made by the teacher himself concerning the child in school. The school medical officer is thus able to concentrate his attention on the direct clinical findings and thus with experience and practice forty children can readily be examined in the ordinary day of rather more than five hours. This concentrated work is carried out in school and in school time and represents about two hundred and sixteen days' work a year. The fixed hours and definite holidays are very distinctly appreciated by medical officers.

Each medical officer usually examines some 7,000 children a year and the whole staff is responsible for the routine examination of at least 100,000 children *per annum*.

In addition to the routine work there has been in recent years the development of specialist positions so as to gain full value from experience and training along special aspects of education and of children in general. A medical officer is allotted to the Teachers' College as lecturer on hygiene which is an essential subject in the training of teachers. The health of all entrant teachers to the Department is also very closely supervised. Special work is also conducted by one of the metropolitan officers on all delinquents at the Children's Court, the work being full of problems, both physical and mental. Special attention is directed towards the health control of boys and girls in the high schools. In the country, work has now been allotted into districts and senior officers have been placed in charge of such districts, paying special attention to high schools and to the control of epidemic diseases affecting school children in their area. Here co-operation is being maintained with the Health Department who have been extending Schick methods of testing and immunization against diphtheria into the various country towns. In the city small districts have now been allotted and it is felt that this results in a medical officer gaining a more thorough acquaintance with the conditions both at school and at home which surround a child's existence.

During 1926 the method of metropolitan inspection has been changed. The triennial inspection of schools in country areas is rendered inevitable by the tremendous distances to be travelled and the expense and time thus involved. Such objections do not exist in the city. The new scheme corresponds very closely to the English system designed for similar circumstances. Every entrant child, that is, every child in the first class and every leaver, that is every child whose thirteenth birthday occurs during the year, receives the complete routine medical examination as heretofore. It has been found that the majority of defects occurring in school children such as those affecting the nose and throat, teeth, heart *et cetera* are present when the child enters school. The single exception is that of defective vision. A special preliminary test, therefore, is given with the Snellen's chart to all children in third and fourth classes, so as to pick up defects of vision which are readily detectable at that age, approximately nine years.

By visiting the schools every year a much closer nexus will be developed between the Medical Branch and the school teacher and opportunity will be given for the review of all doubtful cases found at the first examination, not only from the point of view of checking the diagnosis, but also in order to insure satisfactory treatment.

In the near future it is proposed to make a special study of all leavers (thirteen year old children) from the point of view of vocational guidance, at any rate from its physical aspect and thus supply a long felt want with regard to selecting the future occupation of the child.

A dental scheme is also on foot in which it is proposed to tackle the enormous field of metropolitan dental treatment by utilizing not only school dentists, but a staff of dental nurses or dental hygienists, following the methods adopted in New Zealand, but concentrating more definitely on the temporary dentition.

By arranging special duties to correspond with increased experience of the officer it has been possible to arrange a better scale of salaries, permitting of more satisfactory promotion. The entrant position at present means a salary for men of £528, rising to £630 *per annum* and for women £450, rising to £550 *per annum*. Where the medical officer is employed in rural work, a travelling (living) allowance of £180 *per annum* is allowed and all actual official travelling—rail, coach and tram fare—is of course met.

Senior officers, men receive £700 to £750 and women receive £600 *per annum*.

Specialist officers, men receive £750 to £850 and women receive £640 *per annum*.

As an addition to the close cooperation which has always been maintained with the Health Department, a position has been created in Broken Hill where the Medical Officer of Health is a part time school medical officer, a sort of liaison officer between the two Departments. This is at present only in its experimental stage.

The qualifications for school medical officers are fairly elastic. For those interested in this phase of work we would suggest attention being given to one or both of two types of work, the first is training and experience in a study of diseases of children, especially those concerning eye, ear, nose and throat, as such defects represent the basis of the work in schools; secondly, training available at the University by which a diploma of public health can be obtained. It is expected that candidates should have at least a year's post-graduate hospital experience, although it is not insisted that such should be as a resident. Apart, however, from scientific training, the personality and ideals of the practitioner are of importance for success in this work. A sense of responsibility, the capacity for handling parents as well as children, an open mind and an interest in social problems are some of these personal, intangible, yet invaluable characters which mean so much in this work.

To the medical practitioner keen on surgery and direct curative effort and with the individual outlook, this public service with its constant routine, its entirely preventive and purely diagnostic interest, the trammels of official instructions, returns and regulations and its relatively slow promotion, would prove tiresome and uninteresting. On the other hand, the pædiatrist, ophthalmologist, aurist and health worker have work full of interest, of new developments and of enormous social importance.

As in most phases of existence, the fullest liberty is compatible only with a certain basis of duties in common. These very regulations, at first irksome and savouring of "red tape," will be found to give great freedom of action, untrammelled by having to please everybody, a security of tenure and a provision for the future in superannuation unknown to private practice, regular hours, regular leisure, regular holidays, no bad debts and a division of responsibility. Lastly, we may note, whatever public utterances may be made, the school medical officer can never be accused of "advertising." These privileges must be bought by the private practitioner and they bridge the gap between the low State salary and the higher returns of practice. Even in money value, as judged by cash credit, the State salary is worth a practice ostensibly double its value.

This broadening of the scope of the work and intensification of the study of details is the remedy which prevents the cramping effect of routine. Gradually, too, closer and closer union is being established between the work of the school medical and that of health services, university teaching and hospital clinical departments, so that a freer interchange of officers and duties will eventually become possible when preventive medicine becomes an organized united effort and forms the background and permeates the fabric of all medical school training and all clinical work, medical, surgical and obstetrical, at hospitals. With this will come junior posts for men after completing a year's residence at, say, £350 a year, when they, after a year's probation can continue if the specialty suits them or go out into practice with a more adequate idea of the needs of school children.

Quite apart from the governmental attitude which has been extensively followed throughout the British Empire, the direct value of a knowledge of school medical work will in all probability in the near future be deserving of the close attention of general practitioners. Although school medical inspection is provided free of charge and is taken up by the majority of non-State schools in addition to the public schools, there nevertheless remains a very important and wealthy section, chiefly of secondary schools, in Sydney who are not visited by Government officers. There are developments on foot which show that these schools are becoming more and more interested in the subject and will in the near future more fully extend the health supervision over their pupils. This, of course, is a great opportunity for the man in practice, preferably one who is an old boy of the school, not only to render service to the community and his school, but to add distinctly to the value of his practice. The Health Commissioners indicate, too, their feeling that in the future, when the knowledge of children's diseases and special defects and of public health in general extends throughout the profession as a whole, much of the work throughout the States in connexion with the school child would appropriately fall within the purview of the general practitioner who should and must form the frontier of public health control. Practitioners then might well consider seriously the question of obtaining such training in view of these possible future developments.

In New South Wales the divorce between inspection and treatment has been partly overcome by the travelling ophthalmic and dental clinics and in the future the chance for preventive treatment as well as diagnosis will add greatly to the attraction of the work. For the young enthusiast interested in broader social problems and a good diagnostician, school medical work provides and will increasingly provide the fullest possibilities for good work and genuine public service and will furnish the individual opportunities for a complete lifework worthy of the profession to which he belongs.

II.

SCHOOL MEDICAL INSPECTION IN VICTORIA.

CONTRIBUTED BY REQUEST BY DR. JANE S. GREIG, MEDICAL OFFICER OF THE DEPARTMENT.

AFTER an interval of five years since last writing on the subject of school medical inspection in Victoria to the journal, I find the most noticeable change is a more general appreciation of the value of medical inspection both by the profession and by the public, with an increasing demand for an extension of the work to ages both above and below that of school life.

Some evidence of this has recently been brought under our notice by the newly appointed Medical Officer of Factories who states that in the examination of boys and girls for permits to begin work she finds those who have been examined by the school medical officers, are generally in good condition, all defects having been remedied; whilst many of the others have to be deferred for treatment before beginning work; she only wishes that medical inspection could be extended to all children so that they might be in good order before beginning their life's work.

Needless to say that is our ambition and within the next three years we hope to have reached four-fifths of all children in the State elementary and high schools in Victoria.

In 1909 medical inspection was begun in Victoria with a staff of three school medical officers.

In 1913 two school nurses were appointed.

In 1915 one additional school medical officer was added.

In 1922 the scope of the work was extended by the appointment of two school dentists and three dental attendants.

The following are extracts from the Annual Report, 1924-1925. Figures for 1925-1926 are not yet available for publication.

Children examined by school medical officers numbered 14,709.

TABLE SHOWING PERCENTAGE OF DEFECTS FOUND IN 1924-1925.

Description of Condition.	High Schools.			Elementary Schools.		
	Boys.	Girls.	Average.	Boys.	Girls.	Average.
Vision notified	3·9	7·6	5·5	4·5	6·5	5·3
Wearing glasses	2·9	4·0	3·4	1·4	1·6	1·5
Deafness notified	0·7	0·8	0·8	2·1	2·6	2·3
Nose and throat notified	6·8	9·3	8·0	11·1	16·1	13·1
Nose and throat operations	14·6	28·3	21·5	11·6	8·6	9·8
Teeth notified	37·0	43·9	40·0	28·0	42·6	34·0
Children with teeth filled	33·6	50·3	42·0	4·8	7·6	5·9
Children wearing artificial plates	1·7	2·2	2·0	0·03	0·07	0·05
Hair (girls only)	..	..	..	..	12·4	12·4
Total numbers	863	918	..	7,861	5,067	..

Teachers examined by school medical officers numbered 775.

Children treated by the school dentists numbered 9,210.

The cost of this treatment was as follows:

Salaries of four medical officers, two dentists, three dental attendants, two school nurses: £4,868 7s. 11d. Other expenses amounted to £1,031 10s. 3d. The total was £5,899 18s. 2d. This includes all running expenses except that of clerical assistance.

The percentage of defects found in 1924-1925 are shown in the accompanying table.

Many other defective conditions were notified, but in each group the percentage was small, anæmia 1·5, heart conditions 0·5.

This does not include children under eight years of age who automatically go to the School Dental Centre for treatment.

In most of the above schools visited the children have been regularly examined during the past fifteen years, but it has to be remembered that at each revisit from 35% to 50% were not in attendance at the previous examination.

In 1925 we had the good fortune to have our medical and dental staff doubled in number by the addition of four medical officers, three dentists and three dental attendants.

The Staff.

The staff now consists of a central medical staff of four full time officers (two men and two women), a country medical staff of four full time officers (one man and three women).

Additional assistance is given by four district health officers (men) attached to the Public Health Department who do part time school work. (The amount done by them nearly equals that of one full time school medical officer.)

The metropolitan staff of school dentists comprises three dentists and four attendants and the country staff consists of two dentists and two attendants.

In Melbourne there is established a fully equipped and up-to-date school dental centre, consisting of an office, two surgeries (three chairs), a large waiting room and an attendant's room. Alterations are at present being made to allow of an additional anæsthetic room and recovery room.

Here three dentists and four dental attendants are constantly employed, the other two dentists and dental attendants doing country work. Of these one dentist and one dental attendant with equipment move as a travelling clinic from town to town along the railway line, using any room available in the school for their work.

The other dentist and dental attendant work in a perfectly equipped motor van which visits small outlying rural schools not on a railway line.

In addition we have two school nurses whose whole time duty is to "follow up" children notified by the school medical officers and see that they get treatment; their work is confined to Melbourne and suburbs.

In some outlying country districts the bush nurses give part time assistance in this work and in the teaching of hygiene in the schools in their districts.

Further, a school cleansing and disinfecting gang of two men is permanently employed in cleaning schools in the metropolitan area.

The Scheme of Inspection.

The scheme of school medical inspection we have adopted, is to visit each elementary school every three years and examine each child. Thus each child will be examined three times in its school life between six and eight years, between nine and eleven years and again between twelve and fourteen years.

In the case of high schools we revisit these every two years.

This gives us an opportunity of examining the large proportion of those becoming junior teachers and of remedying their defects before they join the service.

The programme of work is arranged so that all senior girls and women teachers are examined by the medical women and all the senior boys and men teachers by the medical men on the staff; infants are usually examined by the women medical officers.

It has been found that this is a satisfactory distribution of the work and it has been much appreciated by the parents and the teachers.

For the medical examination each child is provided with a card on which is recorded a history, obtained from the parent, of all previous illness and ill health, also the height and weight which is taken by the teacher. On this the medical officer also enters his findings. At subsequent examinations the same card is used, so that treatment can be noted and anything of importance entered.

The medical examination is made as complete as possible, each child is undressed to the waist for observation and stethoscopic examination. Vision and hearing are tested, also nose, throat, teeth and ears are carefully examined.

During the medical examination opportunity is taken of giving individual instruction in regard to the care of teeth, fresh air, baths *et cetera* as required and in selected cases the parents are asked to come and see the school medical officer. Only in a few special cases, such as persistent truants, delinquents and court cases is a mental test done by the school medical officers. Although this seems a lengthy proceeding, it is surprising how soon every school medical officers learns to note quickly any deviation from the normal and to give special attention to these defectives, passing by the normal children without loss of time.

To the teachers the school medical officers are indebted for much valuable assistance; in the first instance they summarize the information supplied by the parents, recording it on the child's card, next they weigh and measure each child, also entering this on the card.

After the medical examination is complete they send out from the schools the defect notices to the parents and later by personal inquiry from each child they send in returns showing the amount of treatment received. We much appreciate the good will with which most of them carry out this work and we know that to many of them we are indebted for the treatment of many children whom careless parents would neglect except for the personal interest shown by the teacher.

Besides the finding of physical defects the school medical officers are ever alive to the general welfare of the child, many cases of dirt and neglect are found to be due to home conditions, poverty, illness or absence of the mother or other social problems. In these cases we get in touch with other public agencies who devote themselves to these activities, such as the Child Welfare Department, ladies benevolent societies, church and mission societies, holiday homes for children and the Society for the Prevention of Cruelty to Children.

In other directions we have been able to give help by examining children for the Repatriation Department in connexion with scholarships provided for the dependants of deceased soldiers; in these cases guidance has been given for vocational training.

Also for several years past we have included as a routine the examination of children in special schools, such as the deaf and dumb, blind, mental defectives and epileptics and in institutions such as orphanages, reformatories, church schools *et cetera*. Here we find that we have been of the greatest use; for instance, at the Epileptic Colony we were the means of getting dental treatment begun, thus removing toothache as a possible aggravating cause of fits. At the Deaf and Dumb Institution on our first visit many children were found with defective vision, these were then relieved by suitable glasses and so with other defects.

In other institutions mild epidemics of scabies and ophthalmia were present which were not looked on as of sufficient importance to be brought under the notice of the honorary medical officer.

One of the most difficult and unpleasant problems that faces those in charge of a residential institution is that of nocturnal enuresis, especially in boys; in this there is the greatest need for the assistance of the visiting medical staff.

In most institutions the standard of cleanliness and clothing is reasonable, but when one analyses the dietary that is provided, not for one day or one week or one year, but for long periods, it is found almost invariably to be below what we consider as physiological requirements.

Bulk in food is supplied by carbohydrates in quantity, this is usually bread and dripping or bread and jam, often this with a drink of tea being the food for two meals each day; added to this a farinaceous pudding, sometimes improved with a little milk or egg. But how rarely is a cup of milk or an egg ever given to a single child.

If given, the milk is usually half strength with water and an egg may be given once a week in the egg season.

Most institutions provide one hot meat and vegetable meal once a day followed by pudding, but in some cases we have found on careful inquiry that this is replaced three times a week by a vegetable soup. So that of protein food, a small piece of meat is given to each child once a day for three or four days only in each week.

In institutions for children uncooked fruit and fresh salad, vegetables are very rarely provided; in one case we found that a banana was given to each child every Friday; this was an attempt in the right direction.

The medical examination shows that for height and weight these children often compare surprisingly well with the average child, but in type they are found to be heavy and stolid and lack that mental and physical alertness which should be the prerogative of a healthy, happy childhood.

We are, however, encouraged to find that the Charities Board is now giving these matters its attention in the institutions under its care.

In this State the problem of mental defectives has been practically severed from the school medical service. A Mental Defectives Bill is now before the State Government chiefly under the ægis of the Lunacy Department.

School Dentists.

The work of school dentists is primarily intended to be educational and preventive, rather than from the point of view of the amount of treatment done; but it is found that nothing makes such an impression on the parent or gives such satisfaction to the child as to have the teeth polished and clean.

For this reason every child who visits the School Dental Centre in addition to the treatment done, has the teeth mechanically polished and is told how to use a tooth brush.

As the objective of all school dental work is to leave the child with a complete set of permanent teeth, we begin with the youngest children in school and as there is far more work than can be undertaken with the present dental staff, we do not begin with any child over eight years of age. Where possible we hope to keep the children treated under observation until they are twelve years of age, when we think they and their parents should have enough interest to look after them for themselves, especially as it is found that comparatively little further treatment is required for several years.

Although orthodontia in the more advanced cases is not undertaken, much simple regulating is done.

It is the experience of all school medical officers that the results of the school dentist work is beyond expectation; it is found that with the cleaning up and removal of the carious milk teeth about the age of six or seven years, even if the child never again returns to the dentist, that the mouth never gets into the foul condition of those children who have not had the advantage of this early dental treatment.

School Nurses.

Our two school nurses spend their whole time in following up all children with defects notified by the school medical officers, by visiting the home and interviewing the mother and finding out what treatment has been received; whether they have been taken to a doctor privately or whether they were in a lodge or went to a hospital; or if there has been no treatment, what objections or difficulty they had in getting treatment and then always suggesting to the parent how these difficulties can be overcome.

When the mother is incapacitated or fully occupied earning her living, the school nurse will with the parent's consent take the child to a hospital for treatment or operation.

In this way in the metropolitan area, treatment can be obtained for practically every child and as a result in the schools dealt with by the school nurse, treatment returns have increased to 85% and 90%. When associated with a keen and enthusiastic head teacher who is personally known to the parents, 95% of the children have received treatment. That is 95% of the children have visited a doctor or a dentist; the quality of the work, of course, depends on the doctor or the dentist seen and on the interest he takes in the case.

Other Duties of Medical Officers.

Besides the medical examination of school children the school medical officers are responsible for the examination of:

(i.) All teachers entering the Public Service.
(ii.) All teachers applying for superannuation.
(iii.) All teachers on sick leave for one month or more.

Also a considerable amount of the time of the central medical staff is devoted to the giving of lectures on hygiene:

(i.) At the University to students taking the diploma of education course and to science students graduating in physiology and hygiene.
(ii.) To teachers at the Teachers' College, Domestic Economy College and summer schools.

Conclusion.

The ultimate value of medical inspection really depends to a great extent on the support given to it by the general medical practitioner and his outlook on the work and whether he is sufficiently interested to treat the beginnings of disease. On him also depends the responsibility of whether the systematic examination of the individual is to be continued throughout adult life or whether it ends with the child at school.

Suggestions have been made in this State that a "health clinic" or an "overhaul department" might be associated with each of our public hospitals. If this were so I think that, as well as benefiting the individual it would probably lessen admissions to other departments of the hospitals and improve the general health of the community.

III.

SCHOOL MEDICAL INSPECTION IN QUEENSLAND.

DURING recent years no regular inspection of school children was carried out in Queensland. During this year, however, Dr. H. L. St. Vincent Welch was appointed Chief Medical Officer of the Education Department. Dr. Welch has not yet had time to organize the work of his department. The schools of Queensland are scattered over such sparsely populated districts and travelling takes up so much time that a large staff will be required if satisfactory results are to be obtained. If the Government is generous to Dr. Welch in regard to assistance there is no doubt that progress along right lines will be made.

IV.

SCHOOL MEDICAL INSPECTION IN SOUTH AUSTRALIA.

COMPILED BY SPECIAL REQUEST BY DR. GERTRUDE HALLEY, PRINCIPAL MEDICAL OFFICER, EDUCATION DEPARTMENT, SOUTH AUSTRALIA.

A ROYAL COMMISSION was appointed in 1912 to inquire into educational matters in South Australia. One of their recommendations was that a medical

inspector of schools should be appointed. Previous to this, in 1909, one thousand public school children, selected from all over the State, had been medically examined and a report furnished to the Government.

In 1913 a medical inspector of schools being appointed, the systematic examination of the school children was commenced. I was assisted by a school nurse. With such an inadequate staff it was impossible to do more than touch the fringe of the work. Approximately four thousand children were examined yearly. For twelve years there was no addition to the medical staff, although during the period of the war the Government sanctioned the appointment of an additional medical officer, but owing to the shortabe of doctors no applicant was deemed suitable, so the appointment lapsed.

In 1921 a dentist and dental assistant were appointed to visit the outback districts; the work was largely educational.

The Director of Education in his Report on the Imperial Educational Conference held in London in 1923 recommended *inter alia* the full medical and dental inspection of the children in the public schools in South Australia. In 1925 a scheme was drawn up to carry out this recommendation and a full staff appointed.

The present staff consists of the Principal Medical Officer, five medical officers (one man and four women), three dentists (two others to be appointed when suitable applicants are available), four school nurses, three dental assistants (two of whom are trained nurses), a disinfecting officer, with the necessary clerical staff. The psychologist is attached to work in close association with the medical branch. The Principal Medical Officer receives from £600 to £750 *per annum* and the medical officers receive from £450 to £650 *per annum*.

The staff are appointed by the Cabinet on the recommendation of the Public Service Commissioner. They have the choice of joining either the Public Service or the Education Department Superannuation Fund. At the present time a bill is before Parliament providing for a more liberal superannuation fund for public servants.

The scope of the work of medical inspection in South Australia includes the medical and dental inspection of all children attending the primary schools at least twice during their primary school life; first as entrants and again when they reach the third or fourth grade. All children are again examined on entrance to the central, high and technical schools and again those who remain for a third year at such schools.

The medical inspection cards are forwarded when the child goes on to a secondary school and when they are transferred from one primary school to another. Thus a complete and continuous health record will be obtained of all children in the schools.

Under the provision of the *Education Act* any private school wishing to have medical inspection may on application to the Minister of Education have this privilege extended to them. Already many denominational schools have asked for medical inspection and are being examined by the medical staff.

The duties of the Principal Medical Officer are largely administrative and include the compilation of the annual report of the Medical Branch and any other departmental reports that may be called for. In addition, lectures are given on school hygiene to four different groups of students at the Teachers' College; women entrants to the Teachers' College are submitted to medical examination; sick leave of absence of students who are absent for three days or less is overlooked (for longer leave they must produce a medical certificate from their own doctors); the candidates for teachers' classification examination are examined in school hygiene, school hygiene being a compulsory subject for classification in the Education Department.

The control of infectious diseases in schools is undertaken by the Medical Branch. All cases of infectious disease notifiable under the *Health Act*, including measles and whooping cough, are immediately notified by the teachers to the office. A copy of these notices is sent daily to the Central Board of Health which in return furnishes the Medical Branch with a list of infectious diseases occurring among children of school-going age reported to them. A full record is kept of infectious cases in all schools in the State. This entails a considerable amount of clerical work. The Central Board of Health requires all schools to be disinfected if a child has been present in school in a condition likely to spread infection. In the metropolitan area this work is done by the Disinfecting Officer of the Department. In the country an officer of the Local Board of Health disinfects the school or in small country schools a thorough scrubbing of the furniture, floors *et cetera* is carried out under the supervision of the head teacher.

In serious outbreaks of infectious disease the schools are visited by the Principal Medical Officer or one of the medical officers and if necessary in an outbreak of diphtheria, swabs are taken. These are examined at the bacteriological laboratory of the Adelaide Hospital, the cost being charged to the Education Department. Special investigations, such as the occurrence of trachoma and acute conjunctivitis, are undertaken and reports forwarded to the Minister of Education.

The school medical officers have country districts allotted to them in which every school, however small, is visited. In addition, they spend at least twelve school weeks in the metropolitan area. This keeps them in close touch with headquarters. Conferences of both medical and dental staffs are held in the school vacations.

The medical officers work independently. Encouragement is given for any special research work.

The man examines the boys in all the high, central and technical schools, in addition to the older boys in the primary schools in the metropolitan area. He has been allotted a district in the west coast where the facilities for travelling and the accommodation

are rather rough for a woman. He also examines the male entrants to the Teachers' College.

The medical examination is carried out only by the medical or nursing staff. In large schools the doctors are assisted by a school nurse. The examination consists of weighing, measuring height and chest expansion, testing sight and hearing, examination of chest and back (the children being stripped to the waist), examination of throat and teeth, cleanliness of hair, body and clothes. A history of previous illnesses and operations is obtained from the parents on a special form which the child hands to the doctor at the time of the examination. Short health talks are given to groups of children, such as care of the teeth, diet, cleanliness *et cetera*.

No medical treatment is undertaken. Should any defect be found, notices are sent to the parents advising them to consult their own doctor, hospital or dentist and asking them to report to the head teacher what action has been taken. Considerable interest is shown by parents; it is quite exceptional for any parent to object to the examination. Requests come from school committees for the medical examination of their school.

A case book with a record of the name of the child, date on which notice was sent and the action taken is kept in the school. About three months after the doctor's visit these case books are returned to the office and if no action has been taken, a second "urgent notice" is sent to the parents. In the metropolitan area and large country centres, if after the second notice no action has been taken, the case is followed up by a visit by the school nurse. On the whole the response has been very good. This depends to a certain extent on the district. In some schools in good residential suburbs over 90% of the children received treatment. In some of the outback districts it is difficult often for the parents, however willing, to obtain special treatment for eyes, throat *et cetera*.

The most cordial relations exist between the school medical officers and the general practitioners. As soon as the school medical officers visit a town, they call on the local practitioners, who often are glad to have a *confrère* with whom they can talk over medical matters.

Research Work.

A survey is being made of the incidence of colour blindness among the children in the schools. When this work is completed, there being over ninety thousand children in the schools, it should be not only of interest, but of some scientific value. An investigation into the blood pressures of the students at the high schools, Teachers' College and upper classes in the primary schools is being undertaken.

As there is medical inspection of practically all school children in the Commonwealth, valuable statistical work is possible and it is hoped that a uniform system throughout Australia will be adopted.

Addresses are given by both the medical and dental staff at schools, mothers' clubs *et cetera*. This is most valuable not only from an educational standpoint, but a sympathetic medical officer does more with a talk to parents than many written notices.

It is found that owing to the publicity given through the schools to the advantage gained by treatment for defective vision, adenoids, dental caries *et cetera*, there is an increasing number of children treated before they present themselves for examination at school.

In addition to the examination of the children the medical officers report on the sanitary condition of the schools, furniture *et cetera*. Throughout the Commonwealth during the last ten years there is a great improvement in the lighting, ventilation, furniture and general hygienic condition of the public schools.

The work of the school medical officers is not easy; it is physically fatiguing as there is a constant stream of children to be examined for several hours at a stretch. For the work not only is a strong physique and a good clinical training necessary, but the medical officer must be tactful and sympathetic with teachers and parents and have a love for children. Long distances have to be travelled in the back country where roads are rough and the accommodation often leaves much to be desired. The work is not the monotonous routine that it is often thought to be; interesting cases and problems are constantly cropping up and there is a wide scope for research work in the field of preventive medicine.

Dental Department.

The school dentists are also under the supervision of the Principal Medical Officer who arranges their itinerary and receives and collates their reports. There has been some criticism by outside dentists in regard to the Dental Department being under the Medical Inspector, but at present it is working very satisfactorily in this State.

The scheme is for the dentists in the country to visit all schools once every three or four years. It would be impossible to treat the teeth of all children, as over 90% of the ninety thousand in the schools require some treatment. The work is largely educational. Talks on the prevention of dental disease and care of the teeth are given to the teachers and children and to the parents, to the latter principally on the need for the care of the primary teeth. The school medical officer reports to the parents that the children's teeth require attention. A few months later the dentist visits the school and examines those who have not received attention. A second notice is sent to the parents informing them that they can avail themselves of the services of the school dentist and enclosing a consent form. No child is treated without the signed consent of the parent.

In the metropolitan area only children under ten years of age are treated at the Dental Clinic. It is felt that this is the most important period. In the country where dental treatment is not easily

obtained, all children are treated, special attention being paid to the youngest ones. The crusade against bad teeth has resulted in some thousands of children visiting their own private dentists in addition to those treated by the school dentists.

The dentists each work with a woman dental assistant. In the country a centre is chosen and the children from a radius of ten miles come into the clinic. The equipment is cumbersome and it is not always possible to get a suitable room for working or accommodation at very small country schools.

The question of the supply of school dentists is important. It has been found impossible to get a full staff. We ask for the highest qualifications. Dentists just completing their university course come for a year or so, but the remuneration is not sufficient to keep them for any length of time; financially they can do much better in private practice.

Mentally Defective Children.

The Psychologist is attached to the Medical Branch. Her duties are to examine and recommend the treatment of the dull and backward and mentally defective; the problem children, that is, the nervous, unstable and stammerers; the delinquent children. She also has to organize special classes for supernormal and subnormal children; to supervise the additional training in the schools of classified teachers for these special classes; to give lectures to teachers and students to enable them to recognize subnormal children and to learn the aim and methods of mental testing. The main function is the examination of exceptional children for the purpose of diagnosis, prognosis and advice as to future training.

The psychological examination is an individual one and its results are correlated with the child's physical health, his heredity, home environment, social and moral reactions, his school history and attainments. No child is judged to be subnormal on the results of a mental test alone. There is a close association between the Psychologist and the medical inspectors. The children selected by her for special classes are further examined by the medical officer, particularly the nervous system.

On the reverse side of the medical card is a space for the results of the Psychologist's examination.

It is a great advantage for the Psychologist to be a trained teacher as the organization and supervision of the special classes and work suitable for the mental age of the individual child are solely under her; the physical side is under the special care of the medical officers. All children in the opportunity classes receive dental treatment, and the children requiring treatment for defective vision, adenoids *et cetera* are closely followed up, as it is felt that it is very important to remedy any physical defects that may be helping to retard the child.

At present the Psychologist has worked only in the metropolitan area. In country districts should the medical inspectors diagnose cases of mental defect, they are reported to the Psychologist and advice as far as possible is given.

The Psychologist also cooperates with the State Children's Council and the Children's Court. Many of the children in the reformatory and probationary schools have been examined.

This is a very important work and I consider it is in the best interests of all that it should be so closely associated with the Medical Branch, for this obviates the difficulty of finding a qualified medical practitioner with the necessary psychological knowledge and teaching experience.

The medical staff is quite adequate to deal with the children in the State. It is expected that a preliminary examination of all the children in the public schools throughout the State (over ninety thousand) will be completed by the end of the year. There is thus a large amount of material available for statistical purposes in the Commonwealth.

V.

MEDICAL INSPECTION OF SCHOOL CHILDREN IN WESTERN AUSTRALIA.

CONTRIBUTED BY SPECIAL REQUEST BY DR. ROBERTA H. M. JULL, SCHOOL MEDICAL OFFICER.

THE work of medical inspection of school children began in Western Australia in 1907. It is carried out under the Public Health Department, not under that of education as is usual elsewhere. At first the services of temporary school medical officers and occasionally those of medical officers of health in country districts were employed, but in 1918 the service was put upon a permanent basis and one full time medical officer was appointed for the metropolitan area. The duties of this officer included not only the inspection of the children and the school buildings, but the giving of lectures on hygiene at the Training College. The giving of these lectures has for the last four years been taken over by the Medical Officer of Health.

In 1925 a second full time medical officer of schools (a woman) was appointed for the metropolitan area and early in 1926 another one (also a woman) was appointed to inspect the country schools. The schools in and around Kalgoorlie have been inspected by a temporary medical officer this year.

From the beginning of this year the Senior Medical Officer has done only part time work, two-thirds of which is devoted to the medical inspection of children in the Fremantle district and one-third to the supervision of infant welfare centres.

There are 794 State primary schools with an enrolment of 51,696 children; of these 92 are within a radius of twenty miles from the centre of Perth; they have an enrolment of 24,000 children. There are 109 private primary schools with an enrolment of 8,744 children. Of these 53 are in the metro-

politan area and have an enrolment of 4,785 children.

There are five State secondary schools (high schools) with an attendance of 1,276 and thirteen private schools of the same kind with an attendance of 2,865. It will thus be seen that there are 64,581 children in the State for the examination of whom only two full time medical officers and one half time officer are available.

It is obviously impossible for even one-third of these children to be examined annually. The school period covers only forty weeks of the year and the work of inspection entails a certain amount of time lost in moving from school to school, consequently the daily average number of forty-five children cannot always be inspected.

No inspection of the secondary schools has been done at all, while large numbers of the primary schools have not yet been visited.

The method of work previously adopted was to examine all the children in each school visited. Since 1921, however, this has been altered to the system used in Great Britain, whereby the children between the ages of seven and eight and twelve and thirteen, together with any "leavers" (thirteen to fourteen years of age) who have not been recently examined, are seen. These are classed as "routines." A few children who are picked out by the teachers as in need of medical examination for eyesight, defective hearing *et cetera* and any children picked out by the medical officer during her inspection of the school are also seen and are classed as "specials."

An attempt is made to visit each school in the metropolitan area once a year. So far this ideal has not been attained, but it is believed that the stimulating effect upon children, parents and teachers of an annual visit by the medical officer is good and will result in an increasingly higher standard of personal and community hygiene.

A comparison of the standard of nine years ago with that of the present day makes it obvious that the interest of the community in measures for the prevention of ill health, has been greatly increased. We still fall far short of an even moderately high standard, but there is no doubt that an improvement is gradually taking place.

An outstanding example of improvement is the knowledge possessed by the children as to the importance of the cleansing of their teeth. Not only are correct answers given to the questions asked on the subject by the medical staff, but it is obvious on examining the mouths of the children that a majority of them do clean their teeth. The parents also are much more alive to the importance of caring for the teeth and many more children have their teeth filled than was formerly the case.

The work of the Odontological Society of which mention was made in a previous article, has not only been steadily carried on, but has been very considerably increased.

It is gratifying to be able to state that during the last month a full time dentist has been appointed who will work actually in the schools. He will concentrate chiefly upon the teeth of the younger children, with a view to saving the six year molars and to preventing oral sepsis. This is only the beginning of a school dental service.

It was hoped that a dental hospital might have been established in the metropolitan area ere this; unhappily this expectation has not yet been fulfilled.

There are three full time nurses on the staff; their work is to prepare the schools for the visits of the medical officers, to accompany the medical officers during an examination, to assist in making records and to receive instruction about children whose homes need to be visited. They also make frequent examinations for pediculosis. Their efforts as regards this last have been attended by very considerable success. There are now some entirely clean schools in the metropolitan area and quite a number where only 4% or 5% of the children are infected. In 1917 no school inspected was clean, nor was any found with so low a percentage as five.

The prosecution of parents whose children are neglected and verminous, is carried out from time to time and has been most salutary.

It is hoped that during the next few weeks an amendment of the *Health Act* will permit of the prosecution of parents who habitually refuse to obtain treatment for children with grossly defective sight, defective hearing or running ears. Not many of these children are met with, but a sufficient number do occur to make such a clause desirable.

About the middle of last year a psychologist (a woman) was appointed, chiefly as an officer of the Health Department; a small part of her time is devoted to lecturing to advanced students at the University. It is hoped that as a result of her work steps will be taken to establish suitable institutions and farm colonies for the reception and training of mentally defective children.

At present there is only one institution for boys, where a small number, about twenty-five only, are in residence.

In the near future the staff of medical inspectors will, it is hoped, be increased by two full time officers, one to inspect metropolitan schools, one to inspect country schools.

VI.

THE MEDICAL INSPECTION OF THE STATE SCHOOLS IN TASMANIA.

CONTRIBUTED BY SPECIAL REQUEST BY DR. E. M. HAWKINS, MEDICAL INSPECTOR OF SCHOOLS, TASMANIA.

To Tasmania belongs the honour of being the first State in the Commonwealth of Australia to institute the medical inspection of the children attending the State schools.

In 1904 Dr. J. S. C. Elkington, then Chief Health Officer of Tasmania, made an inquiry into the sanitary arrangement of State school buildings. He

then suggested that the children attending the schools be medically examined.

In 1905 lectures on hygiene were given by him to teachers and officers of the Education Department.

In 1906 an extensive medical examination of State school children was carried out by officers of the Department of Public Health, the result being that medical inspection of State school children was commenced early in 1907.

At first the work was organized as a branch of the Education Department, but was directed by the Chief Health Officer. Later on this arrangement was found to be unsatisfactory and it is now a branch of and directed by the Education Department. The officers were two part time officers and one full time officer.

In 1910 two nurses were appointed to assist the part time officers in the schools in Hobart and Launceston.

The part time officers visited the city schools once a week, when all new pupils were seen and also any other children who were suspected to be suffering from some physical defect.

The names of all children found to be suffering from some physical defect and the nature of the defects are recorded and notices of such are sent to the parents. The nurses then visit the homes of these children to advise the parents and endeavour to have the children treated.

In 1914 two additional full time officers were appointed. These devote their attention to convent schools and other private schools in the city and to suburban and rural State schools. In these schools which are visited once in two years, every child present is medically examined and the parents advised when a defect is found. The children are medically examined three times during their school life.

On the appointment of the two full time officers the Chief Medical Officer was granted extended leave; she has since resigned and the work is carried on by the two full time officers, one working in the southern and eastern districts, the other working in the northern and western districts.

In 1916 it was decided to enlarge the medical branch and two dentists were appointed. Two dental clinics were established in Hobart and Launceston and the dentists spend part of the time in the cities and part in the country. In the country the usual practice was to make a country town a centre to which the children attending the schools within a radius of ten miles could come. It was found, however, that very few children outside of the town took advantage of dental treatment.

In 1921 two more dentists were appointed. Two then remained in the cities and two spent their time in the country visiting as far as possible every school. Two more nurses were also appointed.

The financial difficulties of Tasmania and the need for economy have resulted in the curtailment of the dental services. There are at present two dentists and their attention is confined to fifth, sixth and seventh class country schools. In other centres with larger schools there is either a resident or visiting dentist to whom the children can go as private patients.

Under the *Education Act* the Minister of Education has very wide powers. The regulations allow him to appoint all officers and to prescribe their duties. When a vacancy occurs and a part time officer is required, the position is advertised in the local press. When it is desired to fill a vacancy for a full time officer the advertisement appears in the local and mainland press. At the present time both the full time officers are graduates of Melbourne University. The salary begins at £375, rising by yearly increments of £25 to £475. When away from headquarters an allowance is granted as well as railway and coach fares.

For the routine of inspection a medical register is employed which is kept among the records of the school. At each visit the name, age, sex, class and previous illnesses of every child present are entered as also the results of the inspection, namely, vision, hearing, defects of nose and throat, heart and lungs, other defects and the action advised. If any defect is found to be sufficient to interfere with the child's health and educational progress, notification is made to the parents.

To test the vision a modification of Snellen's test types is used, vision less than one-ninth in children over the age of ten years being notifiable.

The hearing is also tested by means of the whisper test and anything less than seven-tenths is notifiable.

The skin and hair are also inspected and attention paid to cleanliness.

Stethoscopic examination of heart and lungs is made when possible and especially in children who have suffered from scarlet fever, diphtheria or rheumatic fever.

The medical officer also makes a medical examination of all probationary students at the State high school and all students in the Teachers' College.

Lectures in hygiene which is a compulsory subject, are delivered twice a year at the Teachers' College.

Reports on the school buildings are also made at the visit of the medical inspector. The reports are made under the heading of: (i.) lighting, orientation, amount, direction and management; (ii.) ventilation and its management; (iii.) heating; (iv.) cleanliness; (v.) furniture and seating arrangements; (vi.) overcrowding; (vii.) sanitary arrangements and condition of the exterior of the buildings.

In the city there are facilities for treatment. For those who can afford to pay, there is a large choice of general practitioners and specialists. For others there is the hospital which has a dentist on its out-patient staff. With the following-up system carried on by the nurses many children receive treatment.

In the country conditions are different and it is much more difficult, although many country centres in Tasmania now have a resident practitioner which formerly had not. For those who cannot

afford to pay private fees, treatment means an expensive journey for several members of the family and frequently a stay of at least a night in the city and unless the child is seriously ill the treatment is not carried out.

For the mentally deficient Tasmania has a State psychological clinic. There are in some of the larger schools special classes under capable teachers and in these classes there is much more manual work taught than is taught in a school of children of higher mentality.

A school has been established for girls in which those certified as mentally defective receive training in all household tasks. For one and a half hours in the morning they have lessons, then the remainder of the morning is given up to household tasks, washing one day, ironing, cleaning, cooking. They prepare their own dinner and this one good meal a day has made a marked improvement in the physical condition of these girls.

The afternoon is generally spent in sewing and the girls are taught to make their own garments. These girls are required to attend school until they are sixteen years of age.

Nothing has yet been done for these children in the country. It is hoped, when funds permit, to establish a residential school where these children may be taught to become useful members of society.

The Mental Hospital Services.

I.

THE CARE OF THE INSANE IN NEW SOUTH WALES.

COMPILED FROM INFORMATION KINDLY SUPPLIED BY DR. C. A. HOGG, THE INSPECTOR-GENERAL OF MENTAL HOSPITALS OF NEW SOUTH WALES.

THERE are eleven hospitals for the insane in New South Wales, three licensed houses, two reception houses, one psychiatric clinic for voluntary patients and a pathological department. The number of permanent beds in the eleven hospitals and the psychiatric clinic (Broughton Hall) is 6,604, although the number of patients actually in residence in these institutions is always greatly in excess of the recognized accommodation. The largest hospitals are one at Parramatta for ordinary patients, one at Gladesville and one at Callan Park. The last mentioned has attached to it some cottages for men who served with the Australian Imperial Forces and other military forces in the Great War and who were admitted to the mental hospital on their return to Australia on account of mental disease. These cottages have accommodation for eighty-seven patients. At Parramatta there is also a small hospital for the criminal insane. It is unsuited for its purposes and it is hoped that the proposal put forward by the late Dr. Eric Sinclair and by the present Inspector-General that an adjoining institution should be secured and modified to meet the requirements of a mental hospital, will soon be adopted.

The psychiatric clinic, Broughton Hall, has accommodation for one hundred and thirty-two patients. Voluntary patients are admitted to all the mental hospitals in the State and advantage is being taken of this arrangement by a steadily increasing number of persons.

The history of the development of the mental hospitals in New South Wales is a highly interesting one. During the course of half of a century the lunatic asylums, bearing all the terrible characters of the worst types of prisons, have been swept away both in name and in fact. In their place real hospitals have been erected in which the minimum of restraint is exercised and the maximum of therapeutic influence over the unfortunate patients. Little by little the expedients of freedom, early treatment during a period of observation before admission to the general wards and trial leave have borne excellent fruit. Some sixteen years ago admission wards or blocks were attached to the larger hospitals. The scheme of the open hospital for persons suffering from mental disease in an early stage or in a form amenable to treatment has been introduced and extended with encouraging results. Sooner or later psychiatric wards will be introduced into the great metropolitan hospitals for the benefit of the patients and to the advantage of the teaching of psychiatry to medical students.

The service has a staff of nearly four thousand people. Of these eighty-three are officers. The head of the service is the Inspector-General of Mental Hospitals whose offices are situated in Sydney and who has complete control over all the institutions and those engaged in them. He has large responsibilities and extensive powers. The office is filled by a psychiatrist of much experience and administrative ability. He is paid a salary of £1,400 a year.

In the larger mental hospitals, such as Callan Park, Gladesville and Parramatta, there is a medical superintendent of the first class, a deputy medical superintendent and a staff of medical officers. At the smaller and less important institutions the medical superintendent is of the second class and there is no deputy medical superintendent. A medical practitioner entering the service is appointed a junior medical officer at a salary of £463 4s. 4d., with a deduction of £100 for furnished quarters, fuel, light, laundry and service. The appointment is for a period of twelve months. At the end of the period the practitioner is either promoted to the position of medical officer or must leave the service. Medical officers are paid £474 4s. 4d., with £100 deduction for furnished quarters, fuel, light, laundry and service, rising to £647 4s. 4d., with the same deduction. Their duties are those of a resident medical officer, but they are required in addition to attend the special course in psychiatry at the University of Sydney and to obtain the diploma.

Promotion follows in accordance with length of service, but the appointment of a medical officer to the position of senior medical officer and to the higher positions depends on the occurrence of vacancies. Senior medical officers receive a commencing salary of £697 4s. 4d., rising to £797 4s. 4d., with the same deduction as has been mentioned above. The next step is to the position of deputy medical superintendent or medical superintendent of the second class. These positions carry a salary ranging from £847 4s. 4d. to £897 4s. 4d., with deduction of £100 for furnished quarters, fuel, light and laundry, but no service. Medical superintendents of the first class receive a salary starting at £971 4s. 4d. and rising to £1,071 4s. 4d., with a deduction of £124 for quarters, light, laundry and part furniture.

All medical officers after the twelve months' period of probation are entitled to contribute to a superannuation fund. The rates of contribution vary with the age of the officer on appointment and the amount of pensions depends on the rate of salary. Medical officers are given one month's annual leave for recreation in addition to four days' privilege leave every month. Extended leave after fifteen years' service is granted. If the extended leave is taken after fifteen years, its duration is three months; if it is taken after twenty years, its duration is six months. If it is taken later, it is calculated at the rate of six months for twenty years' service.

Medical officers are expected to carry out research work in the department in which they are engaged. There is a pathological department with a Director who undertakes all the bacteriological, biochemical and pathological work needed in the mental hospitals and who also engages in original research work. The laboratories are in the Medical School of the University of Sydney. The Director is paid a salary of £897 4s. 4d. a year.

II.

THE HOSPITALS FOR THE INSANE IN VICTORIA.

THE care of the insane in Victoria is undertaken by the Lunacy Department under the administration of the Inspector-General of the Insane. There are seven hospitals for the insane and five licensed houses. The total number of beds is approximately five thousand five hundred. The total number of persons certified as insane is nearly six thousand five hundred. The Inspector-General of the Insane bears the heavy responsibility in connexion with this large community of people and leaves nothing undone in his efforts to render his service an up-to-date and efficient one. He is paid a salary of £1,500. His staff at the Treasury does not include any medical officers. In each of the seven hospitals for the insane there is a medical superintendent who is in administrative authority over his institution. These officers are appointed at a salary of £750, rising by steady increaments to £900, with £100 deduction for rent, fuel, light, water, milk, vegetables and laundry service. The Medical Superintendents are supported by staffs of medical officers whose number is governed by the size and importance of the hospital. There are six senior medical officers in the service, ranking under the Medical Superintendents. They are placed according to the Public Service regulations in Class B. Their salary starts at £600 and rises to £650, with deductions of £72 for rent, fuel, light, water, milk, vegetables and laundry service. There are seven junior medical officers in all. These officers on appointment receive partly furnished quarters, fuel, light, water, milk, vegetables and laundry service, for which a deduction of £60 is made. They further receive rations for which a deduction of £14 a year is made, so that the total deduction of £74 from the initial salary of £515 leaves the junior medical officer a net salary commencing at £441 a year. The maximum salary for junior medical officers is £552 a year.

The Pathologist is a whole-time medical officer and has the same status and emoluments as the senior medical officers. He has his laboratories at the Kew Hospital for the Insane. There is no contributory scheme for pensions or superannuation.

There are two receiving houses, one at Royal Park and the second at Ballarat. At the former there are usually about seventy patients in residence, while the average number of patients in the latter institution is under ten. The receiving houses are under the control of the Medical Superintendents of the two hospitals for the insane adjoining them. In each of the larger hospitals there is provision for voluntary boarders. At Kew there is a hospital or colony for mentally defective children.

The medical officers are required to assist in the training of nurses as well as conducting their own medical work. The examinations at the end of the first, second and third years are conducted by the Medical Superintendents.

III.

THE CARE OF THE INSANE IN QUEENSLAND.

COMPILED FROM INFORMATION KINDLY SUPPLIED BY DR. H. BYAM ELLERTON, THE INSPECTOR OF HOSPITALS FOR THE INSANE, QUEENSLAND.

IN every ten thousand of population there are approximately thirty-five or thirty-six insane people. By insane people is meant persons who have been certified as insane. The amount of mental disease is actually considerably greater, for persons suffering from mild forms are usually not certified. The tragedy of insanity is greater than that of the deadliest physical diseases. It attacks people in the best years of life; more than half of those admitted to the hospitals for the insane are between the ages of twenty and fifty. It deprives the victim of his right of freedom for long periods of time, often for the remainder of his life. It renders the individual useless to the community, it imposes an immense burden on the State and it impedes the healthy, productive development of the race. In

Queensland provision has to be made for care of approximately three thousand insane persons, for their reception in institutions and for their treatment. For this purpose there are three hospitals for the insane and one reception house. The largest hospital is at Goodna. It accommodates some 1,474 patients. At the Willowburn Hospital, Toowoomba, there is room for 1,114 patients, while at the Ipswich Mental Hospital there are 449 patients. The Reception House is situated in Townsville. The average number of patients in residence at this institution is just under four. All the patients are placed under observation for a time and if it is held that the patients should be admitted to a hospital for the insane, they are sent to the Goodna Mental Hospital.

The service is under the control of the Home Secretary's Department. It is placed under the administration of the Inspector of Hospitals for the Insane who also holds the position of Medical Superintendent of the Goodna Mental Hospital. He is required to carry out his duties in accordance with the provisions of the *Insanity Act*, 1884. He has no central office, but conducts his supervisory work at Goodna and visits the other institutions under his control as often as is necessary. The salary attaching to the dual position of Inspector of Hospitals for the Insane and Medical Superintendent of the Goodna Mental Hospital ranges from £850 to £1,000 *per annum*. At Goodna he has on his staff a senior medical superintendent whose salary commences at £575 and rises to £750, a second medical superintendent who receives an initial salary of £500, rising to £650 and a third medical superintendent whose salary is £360 and who is permitted to conduct private practice in the district. All the medical officers are provided with an unfurnished house, fuel, light, milk, garden produce and laundry service.

At the Willowburn Mental Hospital the Medical Superintendent commands a salary rising from £650 to £850. At present there is only one assistant medical superintendent, who is paid a salary starting at £500 and rising to £650. A proposal is under consideration to alter the salary attaching to this position to one rising from £550 to £700. Another proposal that is receiving attention, is the appointment of a third medical officer to this hospital.

There is only one medical officer at the Ipswich Mental Hospital, the Medical Superintendent. His salary comes under the class starting with £600 and rising to £800 a year.

The medical officers at Toowoomba and at Ipswich are provided with unfurnished quarters and extras as at Goodna. Every medical officer in the service is allowed six weeks leave on holiday each year. They may contribute to a superannuation fund set up under the conditions prescribed by the *Public Service Act*, 1922. The premiums entitle the holders or their next of kin to £100 during incapacity, £800 in the event of death and an annuity of £200 after the officer retires at the prescribed age. The incapacity allowance is payable only after the officer has exhausted all the sick leave with pay and half pay for which his service makes him eligible.

Each of the three mental hospitals is a State registered training school for mental hospital nurses. The course of training extends over a period of three years. Trainees are instructed by the resident medical officers at each hospital. At the end of the first year the pupil nurses are required to pass a probationary examination. On completion of the full course of training, they are required to present themselves for the examination prescribed by the State Nurses' Registration Board. Both male and female nurses are required to continue their course of training until they obtain their certificates or until they have completed five years' service.

The Reception House at Townsville is under the charge of a nurse. There is a visiting medical officer who is a part time officer in the service.

There is a mental ward at the Brisbane Hospital. The patients are treated by the members of the medical staff of the hospital as voluntary patients. If it becomes necessary to have the patients certified as insane, they are transferred to one of the hospitals for the insane.

IV.

THE CARE OF THE INSANE IN SOUTH AUSTRALIA.

COMPILED FROM INFORMATION KINDLY SUPPLIED BY DR. BEDLINGTON H. MORRIS, THE INSPECTOR-GENERAL OF HOSPITALS OF SOUTH AUSTRALIA.

IT is usually held that there is a fundamental difference between a mental defect and insanity. The former is a developmental anomaly affecting the brain and especially the supragranular layer, while the latter is a pathological condition which may be inherited or acquired. This distinction is ignored by the legislators of South Australia and the detention and treatment of persons suffering from diseases of the mind are carried out in accordance with the provisions of the *Mental Defectives Act*, 1913. The control of the hospital for the insane and of the Reception House is carried by a board of three persons of whom the Inspector-General of Hospitals is the Chairman. The Act provides also that the Inspector-General of Hospitals is responsible for the general conduct of the institutions and for the manner in which the patients are dealt with.

The hospital for the insane is known as the Parkside Mental Hospital. It has accommodation for over 1,200 patients. The hospital is under the administrative control of a medical superintendent whose salary is £825 a year with house, rations, fuel, light and laundry service. The Medical Superintendent is also Medical Superintendent of the Hospital for the Criminal Insane. He is responsible for the proper control and care of the patients and for the maintenance of order in the two institutions. He is entitled to three weeks' recreation leave each year and sixteen days' sick leave on full pay.

The medical staff at Parkside comprises also a deputy superintendent, a junior medical officer and a house surgeon. The Deputy Medical Superintendent is in receipt of a salary of £675 a year, with apartments, rations, fuel and light. His duties are those of a senior medical officer. In addition he acts as Deputy Medical Superintendent to the Hospital for the Criminal Insane. He is entitled to three weeks' recreation leave and sixteen days' sick leave on full pay each year.

The Junior Medical Officer carries out the duties usually performed by a resident medical officer. He is paid a salary of £550 a year with apartments, rations, fuel and light and is entitled to the same leave as the medical superintendents. All three medical officers are further entitled to long leave of six months' duration after each period of five years' continuous service in the institution.

A special arrangement exists whereby two resident medical officers are appointed for interchange between the Adelaide General Hospital and the Parkside Mental Hospital for a period of twelve months. Each serves for a period of six months at the two institutions. The salary paid is £100 a year with apartments, rations, fuel and light. The duties of the House Surgeon are the same as those of a junior resident medical officer.

There is a visiting surgeon for diseases of the ear, nose and throat, a visiting Gynæcologist and a visiting ophthalmologist, all of whom are honorary officers.

The Enfield Receiving House has a staff of two part time medical officers who attend daily and when required by the Matron. The Medical Superintendent is responsible for the treatment of the patients in the institution. The average number of patients in residence is between eighteen and nineteen. The Medical Superintendent receives a salary of £360 a year. He is not entitled to holiday leave and if he takes a holiday, he has to obtain permission from the Mental Defectives' Board and he must provide a substitute.

There is also a Deputy Medical Superintendent, who acts in the absence of the Medical Superintendent. His duties are determined by the provisions of the Act. He is paid a salary of £290 a year.

It is stated that the salaries and allowances of medical officers in the mental hospital service are at present under review by a special board. It would seem that the staff is small in comparison with the number of persons under treatment.

V.

THE CARE OF THE INSANE IN WESTERN AUSTRALIA.

COMPILED FROM INFORMATION KINDLY SUPPLIED BY DR. J. BENTLEY, THE INSPECTOR-GENERAL OF THE INSANE OF WESTERN AUSTRALIA.

THE Hospital for the Insane, Claremont, is the only public institution for the reception of persons suffering from diseases of the mind in Western Australia. There are three smaller institutions, Lemnos Mental Hospital, Greenplaces Mental Hospital and Whitby Falls Mental Hospital for ex-soldiers and private patients. The total number of patients at Claremont Hospital is over one thousand. The service is in the care of the Inspector-General of the Insane who resides at the hospital and has his offices in the same place. The hospital is administered by the Medical Superintendent, who has one senior and one junior medical officer. The Inspector-General has a house and receives a salary commencing at £960 and rising to £1,080. The Medical Superintendent has also a house rent free. He receives certain allowances and is paid a salary commencing at £636 and rising to £804. The Senior Medical Officer is paid £504 on appointment, rising to £600 with board and allowances. The Junior Medical Officer is paid a salary commencing at £432 a year with board and allowances and rising to £526. There is no pathologist in the service. The duties of the medical officers are similar to those of medical officers of hospitals for the insane in other States.

VI.

THE CARE OF THE INSANE IN TASMANIA.

COMPILED FROM INFORMATION KINDLY SUPPLIED BY DR. E. R. A. MCDONNELL, THE MEDICAL SUPERINTENDENT OF THE MENTAL DISEASES HOSPITAL, NEW NORFOLK.

THERE is one hospital for the insane in Tasmania. It is situated at New Norfolk and is constructed on modern lines. Its location is admirable and it is well adapted to the needs of the State. The hospital has accommodation for over six hundred patients. It is under the charge of the Medical Superintendent who has complete control and is in administrative authority. Formerly this officer was not provided with any assistance, but he has now one assistant medical officer. In these circumstances it is almost impossible for modern methods of treatment to be carried out with any prospect of success. An attempt has been made to introduce a working classification of the patients according to their mental disease, but a much larger staff would be needed to enable the responsible medical officer to do this. The interests of the patients cannot be safeguarded as long as six hundred are under the care of only two medical officers.

The Medical Superintendent receives a salary of £682 a year with allowances valued at £93, while the Assistant Medical Officer is paid £544 with allowances valued at £76. There is little more that can be said concerning the mental hospital service in Tasmania. There is at present no attraction to medical practitioners in the island State to take up the study of modern psychiatry, since there is no extensive service and no prospect of applying early treatment on a large scale. According to the regulations of the service all who join the staff of the Mental Diseases Hospital before the age of thirty-two years are obliged to contribute to the superannuation fund.

The Defence Medical Services.

According to the scheme on which the issues of The Medical Journal of Australia devoted to medical education are based, a full description of the three defence medical services will be given by the Director of each next year. The cycle covers a period of five years; it is anticipated that in the sixth year the changes in any of the medical services will be sufficient to call for detailed discussion. On this occasion only the salient points concerning the defence medical services can be mentioned. Every medical practitioner has a twofold duty to his country, one in his professional capacity and the other as a citizen. It is a short-sighted policy to provide defence medical services merely for peace time needs. While governments squander money on unprofitable trading operations and on unnecessary or extravagantly conceived enterprises, it is difficult to find sufficient money to support an organization that will be sufficient to meet a national emergency. No sensible person, however, can doubt the wisdom of preparedness, for the dangers of creating defence services after war has been declared, are necessarily immense and the cost is certainly greater than that involved in maintaining these services as permanent organizations. The lessons of the Great War are still fresh in the memory of all. The undergraduate and the young graduate are especially urged to bear in mind their responsibility in this direction.

For some time past a proposal has been made that the medical services in the defence forces should be amalgamated and placed under one Director-General. The object of this proposal is to increase the efficiency of a service limited in size by the post-war need for economy. The medical officers in such a combined service would be interchangeable and in this way would benefit by a wider experience than that gained in the Navy, Army or Air Force alone. It has been pointed out that it would be easier to maintain a useful nucleus ready for expansion in times of national emergency if the three organizations were united than if they remained separate and independent. This proposal has found favour in the Federal Committee of the British Medical Association in Australia, among the leaders of medical-military thought in Great Britain and elsewhere. The Minister for Defence has been approached, but no further headway has been made. It is possible that those in authority are disinclined to advocate a radical change in the organization of the defence services, lest these changes involve a greater expenditure of money than is anticipated. We regard this policy as an unwise one, for the proposal appeals to us as the most economical way in which a small but efficient medical service can be maintained under present conditions.

The Naval Medical Service.

The Royal Australian Navy has twenty permanent medical officers. The medical officers on joining must produce evidence that they are about the age of twenty-one, that they are British born, that they are registered or entitled to be registered as medical practitioners in one of the Australian States and that they are of good character.

The candidate serves for twelve months as Surgeon Lieutenant on probation with pay at the rate of twenty-eight shillings a day with five shillings deferred pay. He serves for two years at the same remuneration after his appointment has been confirmed and then his pay is increased to thirty-two shillings a day and five shillings and ninepence deferred pay. After six years' service he is due for promotion to the rank of Surgeon Lieutenant-Commander, provided that he is recommended by the Director of Naval Medical Services. The pay is then increased to thirty-eight shillings a day and six shillings and sixpence deferred pay. At the end of nine years' service, provided that the officer is promoted at the end of six years, the pay is increased to forty-three shillings a day with seven shillings deferred pay.

Promotion to the rank of Surgeon-Commander is conditioned by the following record. The officer must have served for twelve years in the Navy, six years in the rank of Surgeon Lieutenant-Commander; he must show that he has not refused service except for reasons acceptable to the Naval Board; he must have passed the prescribed examination which is usually carried out in England as for Surgeon Commanders of the Royal Navy and he must have been recommended for promotion by the Director of Naval Medical Services. The pay is then increased to forty-eight shillings a day and eight shillings deferred pay. At the end of fifteen, eighteen and twenty-one years' service his pay is increased to fifty-two, fifty-six and sixty shillings respectively and his deferred pay to eight shillings and eightpence, nine shillings and fourpence and ten shillings respectively. The rank of Surgeon-Captain carries with it pay starting at sixty-five shillings and reaching four pounds a day. The deferred pay reaches its maximum of eleven shillings and threepence after twenty-four years' service. If the officer joins at the age of twenty-one years and obtains promotion in standard time, he attains the rank of Surgeon-Captain at the age of forty-six years. At the age of fifty-five years he should be drawing £1,470 a year and have nearly £5,000 accumulated as deferred pay. The deferred pay is available on retirement or at death. In addition to the rate of pay the officer receives an allowance for uniform, ration allowance when on leave and lodging allowance under certain conditions.

A scheme of interchange of Royal Australian Navy medical officers with the Royal Navy has been arranged in order that the Royal Australian Navy medical officer may have the same naval training as the Royal Navy. Medical officers employed as specialists in certain professional subjects are granted an allowance of 2s. 6d. *per diem* when so employed.

Post-graduate study in England and Australia is allowed to selected officers.

THE ARMY MEDICAL SERVICE.

The Australian Army Medical Corps has been reduced to small dimensions during the period since the armistice. Those who are responsible for this skeleton corps, are keen, competent and loyal, but in spite of all their admirable efforts, but a wraith of a service would be of small avail should war clouds again darken the horizon. The service consists of the Director-General of Army Medical Services, the Assistant Director of Hygiene, six part time Deputy Directors of Medical Services and one hundred and twenty-three regimental medical officers. A nucleus staff for the Base Depôt of Medical Stores in each Military District is being created. This staff will be placed on a militia basis. Junior medical officers will be appointed supernumerary to establishment, pending their absorption into the service. At the first the personnel will comprise one pharmacist, with officer rank, one sergeant and one private who will be trained in supply, storage, care, accountancy and overhaul of medical equipment. In this way the base depôts in each of the six Military Districts will be established in accordance with the field service regulations on mobilization. The appointment of supernumerary medical officers will enable junior medical practitioners to receive training in the service. When the regimental medical officer is unable to attend a training camp owing to private practice or other urgent reasons, the medical service of the camp can be carried out by the supernumerary medical officer.

Satisfactory progress has been made in the training of the Australian Army Medical Service personnel under the conditions obtaining. Schools of instruction and medical staff tours have proved to be instructive and interesting from the point of view of the military medical officer.

Voluntary aid detachments, intended to supplement the Defence Medical Services in time of national emergency, are attracting renewed attention. The administration of the detachments is vested in a central council of eight persons, three of whom are representatives of the Australian Red Cross Society, three representing the Navy, Military and Air Forces, one the Order of St. John and one representing the ambulance associations. In each State there is a local council of five persons. Volunteers are being sought for the following branches of the work: motor ambulance convoys, ambulance trains, general naval and military hospitals, convalescent homes, rest stations, hospital ships, command depôts, entraining, detraining, embarkation, disembarkation and transport of the sick and wounded. A handbook descriptive of the organization, aims and machinery of the voluntary aid detachments in Australia has recently been issued and should provide all the information needed by those contemplating service.

The period of training at present in the Australian Army Medical Corps extends over eight continuous days and eight whole and half days for periods each year. Trainees for the rank of Lieutenant receive fifteen shillings a day with a maximum of twelve pounds a year. Captains receive twenty-two shillings and sixpence a day with a maximum of eighteen pounds a year. Majors receive thirty shillings a day with a maximum of twenty-four pounds a year. Lieutenant-Colonels receive thirty-seven shillings and sixpence a day with a maximum of thirty pounds a year.

Area medical officers are also part time officers and are paid at the rate of eighty-five pounds a year. The Deputy Directors of Medical Services are practitioners engaged in civil practice. They are required to devote sufficient time to their military duties to enable them to maintain efficiency in their respective districts. The remuneration varies according to the size of the Military District. The maximum salary is £500 a year.

THE AIR FORCE MEDICAL SERVICE.

At the present time the Royal Australian Air Force possesses a small medical service. Candidates for admission must be under twenty-eight years of age, must be of European descent and British parentage and must produce evidence of good character. The candidate is required to submit himself for a physical examination. He must be of sound physique, he must be able to tolerate high altitudes, he must have a rapid reaction time, sound vestibular sense and good ocular muscle balance. If admitted he is given a commission for four years, but this may be extended by resolution of the Air Board. He is entitled to eighteen days' holiday each year. His rank on entry is Flight Lieutenant and his pay is twenty-nine shillings a day with four shillings a day deferred pay. In addition he is given free quarters (married or single, as the case may be), fuel, light, rations and service when available. If rations and the other allowances cannot be provided he receives in lieu thereof three shillings a day for lodging, one shilling and fourpence for fuel and light, one shilling and ninepence for rations and two shillings a day for service. He contributes to a superannuation fund with payment in case of death or accident.

Promotion follows after satisfactory service at the discretion of the Air Board. There is at present no maximum length of service with the rank of Flight Lieutenant.

The chief medical officer of the Force holds the rank of Squadron Leader. His commission is a permanent one. He is paid at the rate of thirty-four shillings a day with four shillings and sixpence deferred pay. Free quarters (married or single), rations, fuel and light and a servant are provided if circumstances permit. Otherwise he is entitled to four shillings and sixpence daily for lodging, one shilling and ninepence for rations, two shillings for fuel and light and two shillings for a servant.

It is anticipated that the service will be increased in the future. In view of the rapid development of the air force for war service, greater attention will have to be given to the medical branch and to the work of determining the fitness or otherwise of men seeking admission to the Royal Australian Air Force.

The Medical Journal of Australia

SATURDAY, NOVEMBER 20, 1926.

The Public Medical Services.

THE immediate object of the present issue is to give to undergraduates and young graduates in medicine an insight into the careeers offered to practitioners in the public medical services. Invitations were directed to the chief medical officers of the seven public health services, of the five school medical services and of the six mental hospital services to contribute full articles dealing with the organization, development and present position of each service, with special reference to the prospects for young practitioners joining these services. Some of the articles have been contributed by the chief medical officers themselves and these are of particular value. To them we tender our thanks in the first place. Others have found it advisable to provide information on which the articles have to a large extent been based. We wish to thank these gentlemen also for their helpful assistance. In a few instances we have been compelled to seek the information from divers sources. The information, taken as a whole, should be particularly useful at the present juncture, in view of recent events and the signs of the times. The day of sanitary control as the principal measure in preventive medicine has gone. In its place there is the scheme of direct attack on the causes of disease. Just as our ancestors found it necessary to break down the conception of a miasma spreading the germs of disease from swamps and of fomites or the conveyance of infection by articles in the vicinity of patients being a common means whereby diseases are spread from patient to patient, so those entrusted with the preservation of the public health have been compelled to base their activities on established facts rather than on unproven hypotheses. The importance of sanitation, of the proper removal and disposal of fæcal and other decomposing material, of adequate ventilation, of good lighting, of the removal of dust and of cleanliness is recognized by all. But even when all these measures of hygiene have been carried out in a satisfactory manner, infective disease will continue to exist unless the infecting agent is sought and rendered incapable of attacking the uninfected or the resistance of the whole community to the infection is raised. The General Medical Council has within the past few years determined that the preventive aspect must be taught throughout the curriculum to medical students. The whole profession is daily becoming more and more converted to the doctrine that its most important function is to prevent, not to cure disease. The Royal Commission on Health has advocated the enlistment of the whole of the practising portion of the medical profession in the campaign against disease. The Great War taught the whole world that a nation that provides for its sick and neglects to maintain the standard of health of the community, is likely to deteriorate and to decay.

Today the number of trained hygienists who devote their energies to the problems of preventive medicine, is relatively small. But it is an increasing number. Governments are beginning to realize the necessity of setting aside large sums of money for health measures. Disease is disastrously extravagant. The loss to the State resulting from incapacity from illness of an individual has been variously estimated. According to Dr. F. S. Hone the death of a young adult involved a loss to the community before the war of not less than £500. It must be remembered that every individual is potentially a producer and his work represents a net gain to the community. Moreover, every illness means the expediture of money in the endeavour to reestablish lost health. If this endeavour be vain, the money spent is wasted. Employers of labour are awakening to the fact that it pays to spend money for the purpose of maintaining the standard of health of workers at a high level. Modern industrial hygiene has taught the lesson which governments are slow to absorb. All this means that in the near future the public health services will expand and there will be a demand for a large army of trained medical officers in every

branch of these services. The rising generation of medical students and graduates should consider this matter. If the demand for trained hygienists is in excess of the supply in Australia, the authorities will be compelled to seek them in the United Kingdom or even in other countries. With such clear indications it would be foolish if the medical profession in the Commonwealth neglected to make provision for the morrow.

It has frequently been pointed out that sufficient inducements are not offered to the ablest students of medicine to join the public medical services. It is true that the salaries paid are not attractive and that the rate of promotion to the higher positions is necessarily slow while the services are small. The Royal Commission on Health and the Federal Committee of the British Medical Association in Australia have declared in no uncertain terms that higher salaries must be paid to efficient medical officers in the services. Those who are attracted to the career in preventive medicine, may rest assured that better remuneration will be paid in the future. In regard to the rate of promotion, it is obvious that this defect will be remedied, as the services become larger and as fresh branches are established and developed.

There is one other aspect of this important subject to which reference should be made in this place. In the past the administration of the health laws has been kept in distinct compartments as matters affecting each State alone. Australia is a Commonwealth and its interests and objectives as a Commonwealth are paramount. In the olden days of the colonies cooperation and collaboration were not entertained. In these days of federation, the artificial barriers of interstate jealousy and rivalry are fast disappearing. In the matter of the health of the community it must be all or nothing. It is impossible to keep one State free from disease if similar measures are not adopted in the neighbouring State. The health laws must be rendered as uniform as possible and the methods of the administration of these laws should not differ. There must be cordial collaboration and constant interchange of opinion and of thought. The establishment of a Federal Health Council as proposed by the Royal Commission on Health, would remove the last trace of isolation of individual States and make for harmony and team work throughout the Commonwealth of Australia.

THE BRITISH MEDICAL ASSOCIATION.

LEGAL documents as a rule do not make interesting reading. To the average man the phraseology is irritating, the sacrifice of rhythm to stereotype legal diction and the inclusion of many separate ideas in one sentence are unalluring. Notwithstanding this indictment we recommend the Memorandum and Articles of Association of the British Medical Association to every undergraduate in medicine for careful perusal. The constitution of this great organization is not well known, despite the fact that every member of the Association has a copy or can procure one without difficulty. There would be less confusion in the minds of medical practitioners and fewer misstatements by persons outside the medical profession if the objects, machinery and regulations of the Association were better understood. Every student should make it his or her first business after graduation to join the British Medical Association. The main reason for desiring membership is that the Association is an institution of Empire-wide extent for the promotion of medical and the allied sciences and for the maintenance of the honour of the medical profession. This statement embraces three distinct and important ideas.

The first idea is expressed in the title of the Association, the British Medical Association. As long as Australia remains an integral part of the British Empire, peopled by citizens of that Empire speaking the English language, the existence of Branches of the Association in Australia will serve to tighten the bond between the mother country and the Commonwealth. In July last year the Branches in Australia sent to the British Medical Association on the occasion of the opening of its magnificent new house in Tavistock Square, London, a President's chair with words stamped in gold on it. The words are: "ties which, though light as air, are strong as links of iron." The tradition

of this British institution, its steady growth and increase in usefulness in all parts of the Empire and its representative character give it strength that no local society could attain.

The second idea is that the main object of the Association is to increase the sum of knowledge concerning the human and animal body and the diseases which affect both man and beast. In the Memorandum of Association will be found five methods whereby the objects of the Association may be attained. They are the holding of meetings, the publication of information in the journal of the Association, the occasional publication of transactions and other papers, the grant of sums of money for the promotion of the medical and the allied sciences and "such other lawful things as are incidental or conducive to the attainment of the above objects." The Branches of the Association in Australia use the lawful means to further the scientific work of the medical profession. At the present time nearly all the Branches hold frequent meetings at which some professional subject is discussed. As a rule the papers read are valuable contributions to knowledge. They are often records of original research. It is true that the attendance at some of these meetings is disappointingly small, particularly in the larger cities. The papers read at these meetings, with few exceptions, are published in The Medical Journal of Australia, the official journal of the Branches of the British Medical Association in Australia. The Branches expend money for many purposes connected with the advancement of knowledge. Post-graduate courses are organized and lectures are delivered for the benefit of the practising portion of the medical profession. The machinery of the Federal Committee is used for the holding of Australasian Medical Congresses under the ægis of the Branches of the Association in Australia.

The third idea is the most difficult of attainment. Ethical rules have been drawn up in order that the honour and dignity of the medical profession may be maintained. The layman often speaks of medical etiquette in reference to medical ethics. The rules have for their object something infinitely more important than the mere observance of decorous behaviour. They are framed so that the interests of the patient who entrusts his life to the doctor, may not be subordinated to the commercial or personal advantage of the latter. The relations between the doctor and his patient are peculiary intimate and it is the pride of the medical profession that its members honour the trust imposed in them in an ideal manner. In every large group of individuals there must be a few black sheep. The ethical rules enable the Branches to deal with these miscreants. The rules and regulations cannot be used to coerce the members to follow a policy dictated by a few leaders. The constitution of the Association does not permit of trade union methods. Each medical practitioner on applying for membership is required to subscribe to the rules, just as is done in all other societies and clubs. Moreover, the regulations of every Branch are restricted by the Articles of the parent Association. Although the Australian Branches are allowed administrative autonomy, they are necessarily governed by the same fundamental principles that obtain in the constitution of the Association.

Medical Education in Australia.

Last year three articles were published in the Education Number with full details of the medical courses at the Universities of Sydney, Melbourne and Adelaide. Some changes have taken place since these articles were written, but the greater part of the details obtain today and it is therefore unnecessary to recapitulate them. Perhaps the most important event to be recorded is the taking of the initial steps to establish a medical school in the University of Queensland. The plans are still in the making, but we understand that within a short time there will be a department of anatomy and one of physiology.

Young men and women who are contemplating a medical career, as well as their parents or guardians are recommended to refer to The Medical Journal of Australia of June 20, 1925, for full information. In the following will be found some of the main facts concerning medical education in Australia at the present time.

The Medical School of the University of Sydney.

The General Medical Council has imposed certain conditions on universities throughout the British Empire who demand the recognition of their medical degrees for the purpose of registration in the special register. The Senate of the University of Sydney has not found it necessary to modify the matricula-

tion standard. Candidates seeking enrolment as medical students are required to produce evidence of having passed an examination in elementary physics and elementary chemistry. If these subjects have not been taken at the leaving certificate examination or at the matriculation examination, the candidates may sit for an examination on them at the end of the Trinity term of the first year of medicine. The candidate is not allowed to proceed to the first degree examination in medicine until he has passed in physics and chemistry. In the first year the student receives instruction in zoology, chemistry, physics and botany. In the second year the subjects of anatomy, histology and physiology are studied and the student enters the dissecting room. The second degree examination is passed at the end of the second year. The third year is devoted entirely to anatomy and physiology and at its termination the student is required to pass the third degree examination on these subjects. In the fourth year pathology and bacteriology, surgery, medicine and clinical surgery are started. The fourth degree examination is restricted to pathology. The fifth year is crowded with subjects. They include gynæcology, obstetrics, pharmacology, therapeutics and *materia medica*, preventive medicine, medicine and surgery. In this year the student engages in hospital practice, including clinical medicine and clinical surgery throughout the three terms. At the end there is the fifth degree examination. The sixth and last year is reserved for hospital practice in medicine and surgery, while attendance at lectures and demonstrations on dermatology, oto-rhino-laryngology, psychiatry, ophthalmology and medical ethics is prescribed. In addition the undergraduate studies clinical pathology and clinical biochemistry and attends at the Children's Hospital. He also takes a refresher course in practical obstetrics lasting for two weeks. Having attended all the prescribed lectures, clinical lectures and demonstrations and having fulfilled all the requirements in connexion with hospital practice, he presents himself for the final examination for the degree of bachelor of medicine and bachelor of surgery. The candidate must be not less than twenty-one years of age and must produce a certificate of good fame and character, signed by two competent persons.

The fees covering the whole course, including hospital attendance and examinations, amount to £235. If the candidate fail to pass an examination for his degree, half fees are charged for reexamination.

The degrees of doctor of medicine and master of surgery are granted if the candidate has spent at least two years in practice after having passed the examinations for the degrees of bachelor of medicine and bachelor of surgery. He must present a thesis on the results of original research or observation and must be prepared to submit himself to a *viva voce* examination. For the degree of master of surgery he is examined in general surgery, surgical anatomy and pathology, operations on the dead body, clinical surgery and special departments of surgery. The Faculty of Medicine may resolve to exempt the candidate for either degree from any part of the examinations, after having judged the thesis. The fee for the higher degrees is twenty pounds.

The Faculty of Medicine also grants diplomas in public health, in tropical medicine and in psychiatry. For the diploma in public health the candidate must have attended the special courses at the University during a period of six months in chemistry, physiological chemistry, bacteriology and parasitology; he must have attended a course on diseases of animals transmissible to man and he must have undertaken such other studies as the Faculty may prescribe. He then presents himself for the first part of the examination. Before proceeding to the second part of the examination he must have acquired a practical knowledge of the duties of public health administration under a medical officer of health during a period of six months; he must have attended the practice at a hospital for infectious diseases for three months and he must have studied such other subjects as may be prescribed. The fee for the examination is ten pounds.

The Australian diploma in tropical medicine is granted after examination. The course required for this diploma is in two parts; the second and more important is held at the Australian Institute of Tropical Diseases at Townsville and lasts for three months. The fees for the preliminary course and for the course at Townsville together with the fee for the examination is twenty guineas.

The diploma in psychiatry is granted after the candidate has been a resident medical officer at a hospital for the insane for six months or has attended at an approved hospital for at least six hours a week during term time for twelve months, after he has attended courses of lectures and demonstrations in psychology, the anatomy and physiology of the nervous system, neurology and the pathology of the nervous system and psychiatry and after he has passed a special examination.

THE MEDICAL SCHOOL IN THE UNIVERSITY OF MELBOURNE.

Reference has already been made to the requirements of the General Medical Council in regard to the standard of matriculation and to the curriculum for medical education. The Faculty of Medicine has not yet prevailed on the Council of the University of Melbourne to recast the whole curriculum on a logical basis. Within recent years the essential changes have been effected to meet the requirements of the General Medical Council, but much more drastic changes are needed to conform with the real demands of medical education. The course extends over five years and two terms. Entrance is granted to those who have passed the school leaving examination in English, mathematics, Latin and three other subjects. No modern language other than English need be taken. The first year is devoted to chemistry, physics, zoology and botany. The minimum amount of knowledge of these four subjects demanded is not high. At the

end of the year the student must pass an examination in all the subjects. In the second and third years the student is instructed in anatomy and physiology. Attendance at a large number of systematic lectures in anatomy, osteology, embryology, neurology and topographical anatomy is required. Histology is taught in the classroom. Each student must dissect two whole human bodies. Laboratory instruction and demonstration are used in the physiological department. Teaching in applied biochemistry is taught in the third year, while the physiology of the special senses is kept distinct from general physiology. Experimental physiology is taken relatively early. Pharmacology is still included in the work of the third year. The examinations in anatomy and physiology take place at the end of the third year. The candidate then passes into the third division. In the fourth year he studies pathology, bacteriology, pharmacy and *materia medica,* therapeutics, advanced anatomy, obstetrics and gynæcology. The two last named subjects are taught at this stage by lectures and not as practical subjects. Toward the end of the fourth year the student has to attend lectures on medicine and surgery. The main professional subjects are continued in the fifth year and clinical work is then added. He is required to be present at twenty labours and this is rendered possible by arrangements at the Women's Hospital where he resides for the necessary time. The clinical work is carried out at the Melbourne, the Alfred and the Saint Vincent's Hospitals. Every student acts as clerk to an honorary physician, as dresser to an honorary surgeon and as assistant in the out-patients' departments. He is further required to take courses in ophthalmology, oto-rhino-laryngology, dermatology, pædiatrics and venereal diseases. He attends for a period of twelve weeks at a hospital for the insane or reception house and for six weeks at a hospital for infectious diseases. He is taught how to administer anæsthetics, is instructed in operative surgery and is given an opportunity of learning how to vaccinate. He attends lectures on medical ethics and on forensic medicine. In the sixth year he presents himself for his final examination. The subjects are medicine, surgery, clinical medicine, clinical surgery, obstetrics and gynæcology.

The fees for the whole course, including fees for examination for the degrees of bachelor of medicine and bachelor of surgery are about £234.

Special degrees of doctor of medicine and master of surgery are granted after the submission of an original thesis and after examination. At times the written and oral examination is not required. The fee for either is twenty guineas.

A diploma course in public health has been established, the details being similar to those described above under the caption of the Medical School at the University of Sydney. The fee for the examination is ten guineas.

The diploma in tropical medicine is granted after attendance for three months at the Australian Institute of Tropical Medicine at Townsville. The fee for the examination and course is twenty guineas.

An account was published in our issue of May 22, 1926, of the proposals of a special committee in regard to the moving of the Medical School and the erection of a large clinical hospital on land known as the Pig and Cattle Market and the Hay Market sites. The Victorian Government has consented to the proposals and provisional plans have been drawn up. It is too early to anticipate the date when the work of building and equipping a new Medical School and hospital will be completed. We have to await the commencement. But it is certain that the work will be undertaken and that after long waiting the school will be brought into close touch with the main hospital.

The Medical School at the University of Adelaide.

A young man or woman intending to study medicine and to obtain the degrees of bachelor of medicine and bachelor of surgery at the University of Adelaide should have shown aptitude in learning and especially in acquiring scientific knowledge. The leaving certificate is necessary and this entails a pass in English, Latin, Greek or French or German and mathematics. The inclusion of one language in addition to English and Latin is of advantage, but the entire absence of all scientific subjects and the smallness of the number of subjects indicates that the university authorities do not insist on a high standard of general education as a preliminary to admission to a learned profession. A very searching examination would be eminently desirable. Having become enrolled the student turns his or her attention to the preliminary and fundamental sciences. In the first year the subjects of inorganic chemistry, physics, physical chemistry, botany and zoology are taken. At the end of the first year the student is examined in these subjects. In the second and third years anatomy, physiology, histology, biochemistry, organic chemistry, *materia medica* and pharmacology are studied. The work in the dissecting room and in the physiological laboratories occupies the greater part of these two years. The student does not continue the study of the fundamental sciences throughout the whole curriculum as was suggested in the report of the committee of The Medical Journal of Australia on medical education in 1920. At the end of the third year the student passes the second examination and does not again concern himself with physiology or anatomy, save as applied sciences.

The fourth year is spent in the wards. Besides attending lectures on medicine, surgery, pathology and bacteriology, hygiene and preventive medicine, the student does practical work in the pathological laboratory, in the wards, in the *post mortem* rooms, in the museum and in the department of surgical anatomy and operative surgery. The training in obstetrics is begun in this period and at the same time the student attends lectures on gynæcology. The third examination is held at the end of the fifth year and the subjects included are clinical medicine, clinical surgery, regional and surgical anatomy,

therapeutics, pathology and bacteriology, public health and preventive medicine and medical zoology.

The final year is spent at the Adelaide Hospital, at the Children's Hospital, at Parkside Hospital for the Insane and at the Queen's Home. It is a year of the specialties. The student completes his courses in medicine and surgery, does work in ophthalmology, otology, rhinology and laryngology, gynæcology, obstetrics, psychological medicine and so forth. The final examination comprises a test of the student's knowledge in the principles and practice of medicine and of surgery and of all the branches of medicine.

The fees for the whole course, for the hospital practice and for the examinations aggregate about £216. These fees can be paid in one sum in advance or the course and examination fees amounting to £180 may be paid in six annual instalments of £30 each or eighteen trimester instalments of £10 each also in advance.

In June of this year new regulations were adopted governing the granting of the degree of doctor of medicine. These regulations have been published in THE MEDICAL JOURNAL OF AUSTRALIA, July 24, 1926, page 129. The candidate must have passed the examination for bachelor of medicine at least three years before, unless the Faculty of Medicine and the Council of the University sanction a shortening of the period on the ground that the candidate has passed the final examination for the degrees of bachelor of medicine and bachelor of surgery with credit or has held an honorary or salaried position at an approved hospital or has been occupied in teaching in the University of Adelaide or another approved university. He has to submit a thesis. If the thesis is regarded of sufficient merit, he may be granted the degree without further examination; otherwise he must present himself for examination in general medicine and in one of a prescribed set of subjects. If the thesis be not accepted, the candidate is not permitted to proceed to the examination. The fees are fifteen guineas for the examination and ten guineas for the degree.

The degree of master of surgery is granted on conditions similar to those detailed above for the degree of doctor of medicine. The fees are the same.

PRIZES, SCHOLARSHIPS AND FELLOWSHIPS.

THE entrant to the schools of medicine, the undergraduate and the graduate of medicine are eligible for a very large number of special prizes, bursaries, scholarships and fellowships, many of which have a considerable monetary value. Information concerning bursaries and scholarships to be gained at secondary schools cannot be given in this place. Part or even the whole of the cost of the university education in medicine is covered by these prizes. In addition to the bursaries, the following scholarships, exhibitions and prizes are offered to students.

At the University of Sydney the Struth Exhibition valued at £50 a year for five years is awarded to a student at the first year examination in arts for general proficiency, provided that the student enters the Faculty of Medicine. The Henry Wait Bursary valued at £50 a year for five years is awarded for proficiency in the subjects of the first year examination in arts to a student entering the Faculty of Medicine. The Renwick Scholarship carries a prize of £50 for one year for proficiency in the subjects of the first degree examination in medicine. The John Harris Scholarship is a prize of £50 for one year for proficiency in the subjects of anatomy and physiology in the third degree examination in medicine. The Caird Scholarship also carries a prize of £50 for one year; it is for proficiency in the subjects of the fourth degree examination in medicine.

The Walter and Eliza Hall Travelling Medical Research Fellowship is granted to graduates in medicine of the University of Sydney. Its object is the promotion of original research in the interest of medical science and practice in Australia. The Fellowship is tenable for three years. The sum of £150 is paid when the Fellow leaves Australia, the same sum after six, twelve and eighteen months and in the third year a monthly salary of twenty-five pounds. The Anderson Stuart Memorial Research Fellowship is awarded once in every three years. It is tenable for one year by a graduate in medicine of the University of Sydney. The amount of the Fellowship is £225 or such other sum as the Senate may determine. The Norton Manning Prize takes the form of an annual gift of prize books to the value of £5 for work in psychological medicine. The Parkinson Memorial Prize to the value of £10 is awarded annually for proficiency in pathology in the fourth year examination. The Sidney B. Clipsham Memorial Prize valued £4 is for proficiency in operative surgery. The Ethel Talbot Memorial Prize at present takes the form of a monetary reward of £10 for a thesis for the degree of doctor of medicine of special merit. The Dagmar Berne Prize valued at £5 is awarded annually to the woman candidate who displays the greatest proficiency in the final examination for the degree of bachelor of medicine. The Hinder Memorial Prize is awarded annually for proficiency in clinical surgery at the final examination for the degree of bachelor of medicine and bachelor of surgery. Its value is £10. The Craig Prize is also worth £10. It is awarded annually for proficiency in operative surgery and surgical anatomy at the end of the fourth year. The Peter Bancroft Prize is awarded annually for the paper giving evidence of the best research work, not previously published in medicine. Undergraduates are eligible as well as graduates. A private prize is offered annually by Professor F. P. Sandes of £10 for proficiency in surgery and clinical surgery. Another private prize of £10 is offered each year by Professor A. E. Mills for proficiency in medicine and clinical medicine. The Myrtle Sperrey Wardlaw Prize, also a private prize, of five guineas, is offered for the best essay on obstetrics by a student of medicine.

Under the conditions of the will of the late Cecil Rhodes each of the Australian States is assigned one Rhodes Scholarship each year. This scholarship entitles the Scholar to pursue his studies at Oxford for a period of three years. Its value is £300

a year with an annual bonus of £50. It is stated that scholars usually have to supplement the income by about £50. The conditions of appointment, the method of application and the instructions given to the committees of selection are set out in the Oxford University Handbook.

The Orient Royal Mail Line of Steamers, the Peninsula and Orient Steam Navigation Company, the Aberdeen Line, the Blue Funnel Line and the Australian Commonwealth Line have entered into arrangements with the Senate of the University of Sydney whereby three graduates of the University are granted free first class passages to England and return passages after three years. While the companies leave the matter entirely to the discretion of the Senate, it is understood that these passages are given to graduates who desire to study in Europe, but are unable to do so on account of the expense involved in the journey.

At the University of Melbourne the following scholarships and exhibitions are open for competition. The Baird Bursary is valued at £23 a year. It is awarded at irregular intervals. The Beaney Scholarship in Surgery worth £70 and the Beaney Scholarship in Pathology worth £100 are awarded annually. The Fulton Scholarship is for obstetrics and gynæcology and is tenable for one year. It is worth £50. It is awarded annually. The Levi Memorial Exhibition is awarded each year for the best work in medicine. It is value at £60. The Stewart Exhibition in Anatomy, the Stewart Exhibition in Medicine and the Stewart Exhibition in Surgery are awarded every third year. The first is worth £100 and the two others £50 each. There is an annual prize called the Armytage Prize for medical research, a Dwight Prize in Parasitology, Pathology and Bacteriology, worth £25, the Jamieson Prize worth £4 for work in clinical medicine and the David Syme Prize valued £100 for scientific research.

One Rhodes Scholarship, as mentioned above, is allotted to Victoria each year.

The steamship companies mentioned above provide three first class passages to graduates of the University of Melbourne on the same conditions.

At the University of Adelaide the Dr. Davies-Thomas Scholarship of £10 is granted each year to the best student in the second and in the third examination in the medical course. The David Murray Scholarship is awarded every second year by the Faculty of Medicine for the best post-graduate thesis for the degree of doctor of medicine or master of surgery. This scholarship is open to candidates within three years of graduation. Its value is £25. The Lister Prize carries with it a bronze medal and a sum of seven pounds. It is awarded to medical graduates of not more than five years' standing for the best original thesis on some clinical, medical or surgical subject. It is awarded once in two years. If no prize is awarded in any year, it is offered for competition again in the following year. The John L. Young Scholarship for Research is awarded each year for research work in any branch of knowledge. The several faculties recommend the candidate in their departments whom they deem worthy of the Scholarship. The Scholars must be either graduates or present or past students of the University of Adelaide. There is no age limit. The value of the Scholarship is the income from the fund which stands at £700. It is paid in two instalments, one on election and the other six months after election or at some later date. The Dr. Charles Gosse Lectureship and Medal in Ophthalmology is awarded annually to the best candidate, provided that he shall have attained the standard of first class in ophthalmology and shall have passed in all the subjects of the final examination. The University provides out of the interest on a generous donation the annual sum of £500 for the promotion of research on the growth and nutrition of man and animals. The Council appoints a director of the laboratory and a board of management, of which the director is chairman.

The British Medical Association offers a prize of £10 for the best essay by a final year medical student in one of the medical schools in the British Empire outside the United Kingdom. It also awards the Ernest Hart Memorial Scholarship of the value of £200 a year for the study of some subject in the department of State medicine. It offers three research scholarships each of the value of £150 for research tenable for one year, but the scholar may be reappointed for a second year. The British Medical Association further gives grants for the assistance of research into the causation, treatment or prevention of disease.

MEDICAL REGISTRATION.

THE conditions and qualifications necessary for registration are different in the several States of the Commonwealth and persons holding degrees or diplomas in medicine are required to register in each State in which they desire to practise. In past years we have emphasized the disabilities resulting from this lack of uniformity as far as both the individual and the State are concerned. It is therefore a matter of satisfaction that in their report to the Commonwealth Government the members of the Royal Commission on Health which sat last year, recommended that an endeavour should be made by the Commonwealth for the transfer to it of the powers held by the States with regard to registration of medical practitioners.

Since the publication of the last Education Number of THE MEDICAL JOURNAL OF AUSTRALIA a new Act has been introduced in Queensland, *The Medical Act*, 1925; this Act replaces the old *Medical Act* of 1867 and is much more satisfactory from every point of view. The chief improvements have been made in regard to the qualifications necessary to secure registration and the method of dealing with offences. In all the other States the conditions necessary for registration remain unchanged. It is necessary to point out that in the absence of any Commonwealth act dealing with registration persons desiring registration in the Federal Capital Territory must comply with the New South Wales Act.

Fees for Registration.

In Victoria a fee of five guineas must be paid on application for registration. A further fee of five shillings is charged for the registration certificate.

In South Australia there is an annual registration fee of one guinea. Medical practitioners, however, may pay the sum of five guineas either at the time of registration or subsequently as a commutation of all renewal fees.

The fee for registration in Western Australia is ten guineas.

In Tasmania a registration fee of three guineas is payable.

In Queensland the Act provides that an annual registration fee shall be determined in January of each year and that this fee shall be paid by every registered practitioner. On failing to make such payment the practitioner shall cease to be a registered practitioner.

Qualifications for Registration.

In the succeeding paragraphs the persons entitled to registration in the several States are specified.

New South Wales.

(i.) Graduates of Australian universities.

(ii.) Graduates of universities in the United Kingdom.

(iii.) Diplomates of the recognized medical corporate bodies in the United Kingdom entitled to registration in the United Kingdom.

(iv.) Persons who are or have been appointed medical officers in His Majesty's sea or land services.

(v.) Persons entitled to practise in a foreign country which has entered into reciprocal arrangements with Australia in this regard, provided that they have passed through a course of study of not less than five years' duration.

(vi.) Persons who have passed through a course of study of not less than five years' duration in a foreign country and are entitled to practise in that country and who pass an examination prescribed by the Senate of the University of Sydney.

No person who is a German or Austrian subject or who possesses a German or Austrian degree only, can be registered.

Victoria.

(i.) Graduates of the Australian universities.

(ii.) Persons who have passed through a course of study of not less than five years' duration in a British university, college or in any foreign university, college or body recognized in that country and who possess a diploma or degree entitling them to practise in that country, provided that the same arrangements obtain in that country for graduates of the University of Melbourne.

(iii.) One person holding the qualifications of the Boston Homœopathic University and College or of the New York Homœopathic Medical College and Hospital may be registered each year.

Queensland.

(i.) Holders of a degree in medicine or surgery of any university in the Commonwealth of Australia or the Dominion of New Zealand which is legally authorized to grant such degree.

(ii.) Persons who are registered or possess a qualification entitling them to be registered under the medical acts of the Parliament of the United Kingdom or any act amending or substituted for those acts or any of them.

(iii.) Persons who have passed through a regular course of medical study of not less than five years' duration in a school of medicine, and who have received after due examination from some university, college or other body duly recognized for that purpose in the country to which such university or other body belongs, a diploma, degree or licence entitling them to practise medicine in that country.

The Act provides that the Board may refuse to register any person holding a qualification entitling him to practise in the country or state where such qualification was granted, if the Board is satisfied that under the laws, rules or usages of such country or state medical practitioners, duly qualified to practise in the United Kingdom of Great Britain and Ireland or in any part of His Majesty's Dominion, are not permitted to practise in such country or state.

Every medical practitioner on changing his place of abode is required to notify the fact by post to the Registrar. The Registrar may post a notice to any medical practitioner according to his address in the register inquiring whether he has changed his address or residence and if no answer is returned to such notice within six months after the posting thereof, the Board may erase the name of the practitioner from the register.

South Australia.

(i.) Graduates of a university in Australia or New Zealand.

(ii.) Persons registered or entitled to be registered in the United Kingdom.

(iii.) Persons who have passed through a course of study of five years' duration in a foreign country, provided that the standard is not lower than that recognized in South Australia and who have received a degree or diploma and are entitled to be registered in that country, provided that equal rights are granted in that country to persons registered under the South Australian Act.

Western Australia.

(i.) Persons registered under *The Medical Ordinance* of 1869.

(ii.) Persons who hold any one or more of the qualifications in the second schedule and whose diplomas, licences, certificates or other documents were obtained from some university, college or other body recognized for the purpose in the country to which such body belongs.

The person making application for registration must be of good fame and character and be entitled to practise under the qualification by virtue of

which he applies to be so registered in the place where the same was granted.

The schedule to which reference is made, contains the following list: Fellow, member or licentiate of the Royal College of Physicians of London, of the Royal College of Physicians of Edinburgh, of the King and Queen's College of Physicians of Ireland, of the Royal College of Surgeons of England, of the Royal College of Surgeons of Edinburgh, of the Faculty of Physicians and Surgeons of Glasgow, of the Royal College of Surgeons of Ireland, licentiate of the Society of Apothecaries of London, of the Apothecaries' Hall, Dublin, doctor or bachelor of medicine or master or bachelor of surgery of some British or Colonial university.

(iii.) Any legally qualified practitioner registered in the United Kingdom under any Act or Acts of the Parliament of the United Kingdom of Great Britain and Ireland. Medical officers duly appointed and confirmed of His Majesty's sea or land service. Any person who shall prove to the satisfaction of the Board that he has passed through a regular course of medical study of not less than three years' duration in a British or foreign school of medicine and has received after due examination from some British or foreign university, college, or body duly recognized for that purpose in the country to which such university, college, or other body may belong, a medical diploma or degree certifying to his ability to practise medicine or surgery, as the case may be.

Tasmania.

(i.) Graduates of all British universities.

(ii.) Persons entitled to be registered in the United Kingdom.

(iii.) Persons who are medical officers in His Majesty's sea or land services.

(iv.) Graduates of a medical college of Class "A" in one of the States of America, provided that they have passed through a course of study of four years' duration and have received a degree or diploma from that college and provided that they hold a certificate or licence entitling them to practise in one of the States of America.

Methods of Dealing with Offences.

The method of dealing with offences is different in every State. It will be seen that in several of the States the provisions are adequate, but that in others it may be a matter of some difficulty to secure the punishment of an offender.

In New South Wales if it appears to the satisfaction of the Board that any person registered as a legally qualified practitioner:

(*a*) Has ceased to possess or does not possess the qualifications in respect of which he was registered; or

(b) Has been convicted of any felony or misdemeanour; or

(*c*) Has been guilty of infamous conduct in a professional respect, it is lawful for the Board to remove such person's name from the Register.

Persons whose names have been removed under these provisions, have the right to appeal to the Supreme Court and such appeal takes the form of rehearing. In the case of a charge of infamous conduct in a professional respect the Board makes due inquiry sitting as an open court and the person charged has an opportunity of defence either in person or by counsel.

Any person found guilty of making false statements in examination before the Board or with regard to either the fact of registration or the certificates produced for registration purposes is guilty of a misdemeanour and may be imprisoned with or without hard labour for any period up to three years. It is clear that these provisions give the Medical Board wide and ample power.

In Western Australia the *Medical Act* of 1894 is very effective. The name of any person registered under the Act, who before or after registration is convicted of any felony or misdemeanour or of any other offence which in the opinion of the Board renders him unfit to practise, or who after due inquiry is adjudged by the Board to have been guilty of infamous conduct in a professional respect, shall be erased from the Register. No mention is made of any right to appeal. Further, any person who falsifies the Register or presents false documents or is guilty of personation or makes a false declaration or false statement or falsely advertises himself as a practitioner is liable, upon conviction, to be imprisoned for any term not exceeding three years.

According to the Victorian Act a person forging or obtaining a certificate under false representation or falsely admitting or publishing himself as having obtained such a certificate, is guilty of a misdemeanour and is liable to imprisonment with or without hard labour for any period not exceeding three years. No mention is made in the Act of the power or otherwise of the Board to erase from the Register the name of a person who has been found guilty of infamous conduct in a professional respect.

In South Australia the name of a person may be removed from the Register for reasons very similar to those obtaining in New South Wales. Here, however, the removal is effected by order of the Supreme Court or a Judge thereof on application by motion made in that behalf by the Board or Registrar. The Supreme Court has the power of restoring the erased name by order, if it so determine.

According to the provisions of *The Medical Act* of 1925 the Queensland Medical Board may remove from the Register the name of any registered medical practitioner who has been convicted in any part of His Majesty's Dominions or elsewhere of an indictable offence or of any other offence which in the opinion of the Board renders him unfit to practise. The name of a registered practitioner may also be removed if he is adjudged by the Board to have been guilty of infamous conduct in a professional respect or of habitual drunkenness or if he has ceased to possess the qualification in respect of which he was registered. When a charge of in-

famous conduct is made, the Board while making the inquiry sits as an open court, if so required by the person charged. The person charged is allowed an opportunity of defence either in person or by counsel. He also has the right of appeal to the Supreme Court and this appeal is in the nature of a rehearing. The act provides that the expression "infamous conduct in a professional respect" does not include any conduct which either from its trivial nature or from the surounding circumstances does not in the public interest disqualify a person from practising his profession.

In Tasmania the name of a person may be removed from the Register by an order of the Supreme Court or Judge thereof, on application by summons taken out in that behalf by the Medical Council, for fraud, felony or misdemeanour or infamous conduct in any professional respect. The name may subsequently be restored by order of the Supreme Court if the Court so determine and any person whose name has been removed, has the right of appeal to the Full Court.

Books Received.

MIND AND ITS DISORDERS: A TEXT-BOOK FOR STUDENTS AND PRACTITIONERS OF MEDICINE, by W. H. B. Stoddart, M.D., F.R.C.P.; Fifth Edition; 1926. London: H. K. Lewis and Company, Limited. Demy 8vo., pp. 513, with illustrations. Price: 21s. net.

LIGHT TREATMENT IN SURGERY, by Dr. O. Bernhard. Translated by R. King Brown, B.A., M.D., D.P.H.; 1926. London: Edward Arnold and Company. Demy 8vo., pp. 325, with illustrations. Price: 21s. net.

A MANUAL OF PROCTOLOGY, by T. Chittenden Hill, Ph.B., M.D., F.A.C.S.; Second Edition, thoroughly revised; 1926. Philadelphia: Lea and Febiger. Post 8vo., pp. 294, with illustrations. Price: $3·50 net.

FACTS ON THE HEART, by Richard C. Cabot, M.D.; 1926. Philadelphia: W. B. Saunders Company; Melbourne: James Little. Royal 8vo., pp. 781, with illustrations. Price: 35s. net.

YOUNG'S PRACTICE OF UROLOGY BASED ON A STUDY OF 12,500 CASES, by Hugh H. Young and David M. Davis, with the collaboration of Franklin P. Johnson; Volumes I. and II.; 1926. Philadelphia: W. B. Saunders Company; Melbourne: James Little. Royal 8vo., pp. 1484, with illustrurne. Price: £5 15s. per set net.

THE ILLUSTRATED AUSTRALIAN ENCYCLOPÆDIA: Edited by Arthur Wilberforce Jose and Herbert James Carter; Volume II., M to Z; 1926. Sydney: Angus and Robertson Limited. Demy 4to., pp. 749.

PRACTICAL DIETETICS FOR ADULTS AND CHILDREN IN HEALTH AND DISEASE, by Sanford Blum, A.B., M.S., M.D.; Second Revised Edition; 1926. Philadelphia: F. A. Davis Company. Royal 8vo., pp. 375. Price: $4·00 net.

DEFECTIVE MEMORY, ABSENTMINDEDNESS AND THEIR TREATMENT, by Arnold Lorand, M.D.; 1926. Philadelphia: F. A. Davis Company. Royal 8vo., pp. 347. Price: $3.00 net.

YOUR HAIR AND YOUR HEALTH, by Oscar L. Levin, M.D.; 1926. London: William Heinemann (Medical Books) Limited. Crown 8vo., pp. 173. Price: 6s. net.

THE MIND IN DISEASE: SOME CONDITIONS CURED BY SUGGESTION, by M. P. Leahy, B.A. (Dublin), M.B.; 1926. London: William Heinemann (Medical Books) Limited. Crown 8vo., pp. 178. Price: 6s. net.

BAILLIÈRE'S NURSES' COMPLETE MEDICAL DICTIONARY; Edited by H. Clifford Barclay, M.D., F.R.C.S.E.; Third Edition; 1926. London: Baillière, Tindall and Cox. Imp. 32mo., pp. 256. Price: 3s. 6d. net.

AIDS TO PATHOLOGY, by Harry Campbell, M.D., B.S. (London), F.R.C.P.; Fifth Edition; 1926. London: Baillière, Tindall and Cox. Fscap. 8vo., pp. 258. Price: 4s. 6d. net.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xxiv.

RAILWAY CONSTRUCTION WORKS, NORTHERN TERRITORY: Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Ceduna, Wudinna (Central Eyre's Peninsula), Murat Bay and other West Coast of South Australia Districts.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Nov. 23.—New South Wales Branch, B.M.A.: Medical Politics Committe
Nov. 23.—Illawarra Suburbs Medical Association, New South Wales (Annual).
Nov. 24.—Victorian Branch, B.M.A.: Council.
Nov. 25.—New South Wales Branch, B.M.A.: Branch.
Nov. 26.—Queensland Branch, B.M.A.: Council.
Dec. 1.—Victorian Branch, B.M.A.: Annual General Meeting. Election of Council, 1927.
Dec. 1.—Western Australian Branch, B.M.A.: Council.
Dec. 2.—South Australian Branch, B.M.A.: Council.
Dec. 7.—Tasmanian Branch, B.M.A.: Council.
Dec. 7.—New South Wales Branch, B.M.A.: Ethics Committee.
Dec. 8.—South Sydney Medical Association, New South Wales.
Dec. 9.—New South Wales Branch, B.M.A.: Branch.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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